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Transactions of the State Medical Society of Wisconsin ...

State Medical Society of Wisconsin

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TRANSACTIONS

OF THE

WISCONSIN

STATE MEDICAL SOCIETY,

FOR THE YEAR 1879,

WITH ITS

CONSTITUTION AND BY-LAWS,

AND A

LIST OF ITS MEMBERS.

VOLUME XIII.

MEDICINA NUSQUAM NON EST.

MILWAUKEE:
PRINTED BY THE SENTINEL COMPANY.
1879.

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WISCONSIN STATE MEDICAL SOCIETY.

OFFICERS FOR 1879-80.

President,

J. G. MEACHEM, SR., M. D., Racine.

Vice-Presidents,

S. L. MARSTON, M. D., Campbellsport.

E. W. BARTLETT, M. D., Milwaukee.

Secretary and Treasurer.

J. T. REEVE, M. D., Appleton.

Censors,

WM. THORNDYKE, M. D., Milwaukee.

N. M. DODSON, M. D., Berlin.

J. K. BARTLETT, M. D., Milwaukee.

STANDING COMMITTEES.

Arrangements—Drs. Wm. Thorndyke, Nicholas Senn and D. Mason.

Surgery—Drs. T. P. Russell, Solon Marks and Wm. Meacher.

Practice—Drs. E. H. G. Meachem, B. O. Reynolds and Jas. Dorland.

Obstetrics and Gynæcology—Drs. J. B. Whiting, G. F. Hunt and G. Seiler.

Pathology—Drs. M. M. Davis, L. G. Armstrong and Geo. M. Steele.

New Remedies—Drs. Wm. Fox, J. F. Hopkins and Geo. W. Jenkins.

New Medical Literature—Drs. E. L. Griffin, F. Linde and W. F. Whyte.

Ophthalmology—Drs. E. W. Bartlett, B. C. Brett and Chas. Otillie.

Finance—Drs. H. L. Butterfield, A. Grættinger and Henry Palmer.

Ethics—For Three years: Drs. H. P. Strong, P. Fox and G. F. Hunt.
For Two years: Drs. J. K. Bartlett, J. B. Whiting and J. Favill.
For One year: Drs. E. L. Griffin, Ira Manly and D. M. Bond.

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THE METRIC SYSTEM.

[NOTE.—The following is published in obedience to a resolution directing the Secretary to insert in this volume a table showing the relative value of the weights and measures in common use, and those of the Metric System. It is chiefly taken from Dr. Mann's "Manual of Prescription Writing," and from the circulars of Dr. Wrigglesworth.]

The metric system is a decimal one, having but a single unit for each —length, capacity and weight. The prefixes which indicate multiplication and division are the same in all, pointing out increase or diminution by ten, one hundred, one thousand, as in our decimal system of coinage; decrease being denoted by the prefixes deci, tenth, centi, one hundredth, and milli, one thousandth, while increase is signified by deka, hekto and kilo, tenfold, one hundredfold and one thousandfold, respectively.

THE STANDARD OF LENGTH

Is the metre—39.37 inches, and upon this the whole system is founded. The standard of capacity is the litre—1.0567 quarts, and that of weight is the gramme—15.432 grains. It is customary in all countries where the metric system is used in prescription-writing to express all quantities, whether of fluids or solids, by weight; hence, it is the gramme alone which chiefly concerns physicians. Its subdivisions are the decigramme or one-tenth gramme, which, like the mill in our coinage, is practically disregarded; the centigramme, or one-hundredth gramme, and the milligramme, or one-thousandth gramme. The gramme (the precise weight of which is that of one centimetre of water at its greatest density) may be regarded practically as one-fourth drachm, or fifteen grains; hence, a close approximation to a given apothecaries' weight may be made by reducing to grains and dividing by fifteen, or reducing to drachms and multiplying by four.

The following table may be of service:

One Grain	— 0.065	Grammes, or	practically, 0.06
One Scruple	— 1.295	"	" 1.30
One Drachm	— 3.887	"	" 4.00
One Ounce	—31.102	"	" 31.00

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So that in changing from apothecaries' weight to the metric weight, we should write .06 grammes for each grain, 4. grammes for each drachm, and 31. grammes for each ounce.

Similarly, in converting fluid measures, the specific gravity of water is assumed as a base, i. e., the specific gravity of the fluids used is taken as being substantially identical with that of water, and the minim may be considered as equivalent to the grain, when the above rule will give results sufficiently accurate to enable the physician intelligently to comprehend the terms now so frequently found in medical literature, which render such comprehension almost indispensable.

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The reports of all Standing Committee shall, on their reference to the Publication Committee, be published in the Transactions of the Society. All other, or voluntary reports or papers, shall be referred to the Committee under which the report or paper would properly fall, and such Committee shall decide upon the publication of papers so referred.

The publication of any paper is not to be understood as necessarily an endorsement, by the Society, of the views contained therein.

Resolved, That no papers shall be read before this Society, when in annual meeting, that will take more than twenty minutes to read; if longer, a synopsis must be given, and the essay must be referred to the Committee on Publication.

The publication of this volume has been greatly delayed by the detention of manuscript by authors for revision.

The Committee again particularly request members preparing papers to have them completed before presentation, that, if approved for publication, they may be at once delivered to the Secretary, thus avoiding what has heretofore frequently been a source of great delay in the issuing of the Transactions.

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TRANSACTIONS

OF THE

WISCONSIN STATE MEDICAL SOCIETY,

FOR THE YEAR 1879.

BEING THE THIRTY-THIRD ANNUAL SESSION.

ARTICLE I.

PROCEEDINGS.

MILWAUKEE, June 3d, 1879.

The Wisconsin State Medical Society assembled in regular annual session, at the Court House, in the city of Milwaukee, on Tuesday evening, June 3d, 1879, and being called to order by Nicholas Senn, M. D., President, of Milwaukee, was opened with prayer offered by Rev. Dr. Fulton.

The calling of the roll being by vote omitted, the Society was then addressed by Dr. E. W. Bartlett, Chairman of the Committee of Arrangements, as follows:

Mr. President and Gentlemen of the State Medical Society:

Your Committee of Arrangements have the pleasure of extending to you a hearty welcome to Milwaukee again, and hope this meeting will be one of great interest to us all, and of great benefit to the profession of the state. Your Committee would report that in addition to the arrangements which have already been published, we have secured the use of

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this room, by the courtesy of the Supervisors of Milwaukee County, and of Judge Mann, who occupies these apartments. We would recommend that 8:30 A. M., 2 and 7:30 P. M., be observed as the hours of commencing our sessions. The physicians of Milwaukee have very kindly arranged a banquet for this Society, to be given at the Newhall House, to-morrow (Wednesday) evening, to which you are cordially invited, and which we hope you will do them the honor to attend.

The recommendations of the Committee were adopted.

Vice-President J. G. Meachem, Sr., being now called to the chair, President Senn proceeded to deliver the customary annual address, his subject being "Medical Legislation."

At its close, a unanimous vote of thanks having been extended to Dr. Senn, the recommendations contained in the address were referred to the Committee on Ethics, for report; the entire address being referred to the Committee on Publication.

The Society then adjourned until 8:30 A. M. of June 4th.

MILWAUKEE, June 4th, 1879, 8:30 A. M.

The Society was called to order by the President, and on motion the calling of the roll of the Society was postponed until a later hour.

The Censors here made report, recommending for membership:

Hamilton Allen, M. D., of Oconto; graduate of McGill Medical College, 1872.

Charles W. Robbins, M. D., of Milwaukee; graduate of Rush Medical College, 1879.

E. L. M. Bristol, M. D., of Milwaukee; graduate of Jefferson Medical College, 1874.

John E. Garrey, M. D., of Stockbridge; graduate of Rush Medical College, 1878.

Also recommending for readmission to the Society, J. W. Burns, M. D., a former member of the Society. And introducing to the Society Prof. S. J. Jones, of Chicago, as delegate from the Illinois State Medical Society.

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On motion the report of the Censors was adopted, and the gentlemen recommended for membership were admitted to the Society.

On motion the reading of the minutes of the last annual meeting of the Society was dispensed with, and the printed report of the proceedings of that meeting were approved.

On motion of Dr. E. W. Bartlett, the Secretary was authorized to employ a stenographer, for this annual session.*

The report of the Treasurer being called for, was presented as follows:

J. T. REEVE, M. D., *as Treasurer,*

In Account with State Medical Society.

DR.

To balance on hand at last report, . . .		$127.87
Cash received for dues at session of 1878, .		257.00
" " " since session of 1878, .		126.00
Admission Fees, ...		115.00
		$625.87

CR.

By cash paid for printing Transactions, .	$227.80	
Other printing, .	23.00	
Stenographer, . .	31.75	
Postage, postal cards, etc,	35.05	
Secretary, . . .	100.00	
Sundries, freight, etc.,	13.58	
		$431.18
Balance in treasury, . . .		$194.69

On motion, the report was referred to the Committee on Finance.

A communication was received from Dr. D. W. Lynch, of Richfield, making complaint against the Rock River Medical Society, which, on motion, was referred to the Committee on Ethics.

The reports of standing committees being now in order, and that of Surgery being called for, Dr. Meachem, Sr., of Racine,

* Under this resolution a stenographer from the firm of Burke, Kalvelage & Co. was employed, and the reports of the discussions contained in these proceedings are from the notes taken by said firm, and are mostly given verbatim.

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Chairman of the Committee, read a report on the Science and Art of Surgery, referring to and describing many instruments which were either new, or improvements upon old ones.

Upon motion, the report was referred to the Committee on Publication.

Secretary: I have a communication from Dr. Dodson, a member of the Board of Censors, stating that he cannot be here, and requesting that some one be appointed to act in his place for this meeting. I therefore move that the President appoint some one to act in Dr. Dodson's place for this session. Carried.

President: I will appoint Dr. Wilber. The next member to report on surgery is Dr. E. M. Rogers.

Dr. Rogers not being present, Dr. La Count, the remaining member of the Committee, then read a paper on Psoas or Lumbar Abscess.

Dr. Reynolds: I wish to ask the Doctor the position of the limb—whether it was flexed on the pelvis or not.

Dr. La Count: In the fourth case, the hip was flexed upon the body.

Dr. Reynolds: I have had several such cases in the course of my practice, and it seems to me that one of the symptoms in such cases is that the hip is flexed upon the bones of the pelvis. I had a patient that had two different lumbar abscesses, where, in the early stage, about the only sign I got was fixed pain in the lumbar region, and when I say it is not so fatal as generally laid down in the books, it corresponds with my observation of the disease. In all the cases I have met with in a practice of thirty years, I remember but one or two deaths that have occurred from lumbar or psoas abscesses, and yet our authorities say it is almost always connected with diseases of the spine, and scrofulous diseases, and very often terminates in death.

Upon motion of Dr. Van Dusen, the paper was referred to the Committee on Publication.

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The roll of membership was now called. The following list embraces all who responded, or who were known to be present during the session :

E. W. Bartlett, Milwaukee.
J. K. Bartlett, Milwaukee.
Samuel Bell, Beloit.
Ben. C. Brett, Green Bay.
George W. Burrall, Dodgeville.
H. L. Butterfield, Waupun.
H. A. Chase, Viroqua.
D. C. Davies, Columbus.
M. M. Davis, Baraboo.
F. H. Day, Wauwatosa.
James Dorland, Milwaukee.
John Favill, Madison.
M. H. Fisk, Depere.
William Fox, Milwaukee.
J. E. Gee, Brandon.
W. M. Gorham, Milwaukee.
Alois Graettinger, Milwaukee.
E. L. Griffin, Fond du Lac.
A. H. Guernsey, Amherst.
William Hausman, Ashford.
E. G. Horton, Whitewater.
George F. Hunt, West Bend.
John Johnstone, Neosho.
G. D. Ladd, Milwaukee.
D. La Count, Chilton.
Christian Linde, Oshkosh.
Daniel W. Lynch, Richfield.
J. A. Mack, Madison.
H. E. Mann, Marinette.
Solon Marks, Milwaukee.
S. L. Marston, Campbellsport.
Darius Mason, Milwaukee.
J. A. Masterson, Waterloo.
T. F. Mayham, Fond du Lac.
E. H. G. Meachem, Milwaukee.
J. G. Meachem, Racine.
J. G. Meachem, Jr., Racine.
Wm. Meacher, Portage.
Clark I. Miller, Whitewater.
Henry Palmer, Janesville.
B. T. Phillips, Menominee, Mich.
D. A. Raymond, Fond du Lac.
J. T. Reeve, Appleton.
B. O. Reynolds, Geneva.
T. P. Russell, Oshkosh.
George Seiler, Alma.
Nicholas Senn, Milwaukee.
George M. Steele, Oshkosh.
H. P. Strong, Beloit.
Wm. Thorndyke, Milwaukee.
Harmon Van Dusen, Mineral Point.
W. H. Vittum, Baraboo.
H. P. Wenzel, Theresa.
A. L. Wheeler, Spring Green.
J. B. Whiting, Janesville.
W. F. Whyte, Watertown.
O. W. Wight, Milwaukee.
George D. Wilber, Mineral Point.
R. H. Williamson, Milwaukee.
G. F. Witter, Grand Rapids.
E. B. Wolcott, Milwaukee.
H. A. Youmans, Mukwonago.
H. E. Zielly, Chilton.
A. J. Zinns, Milwaukee.

Dr. Butterfield : Drs. Jenkins and Moore, of the Finance Committee, not being here, and there being but one member present on that committee, I move that the Chair appoint others in their place.

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Upon that motion being seconded and carried, the President said: I will appoint Drs. Palmer and Davis to fill the vacancies.

President: The next in order is the report of Dr. Marston, Chairman of the Committee on the Practice of Medicine.

Dr. Marston: I have two papers to present as my report; one a paper on Diphtheria, by myself, and the other a paper on Influenza, by Dr. Griffin, President of the State Board of Health, written at my special request.

Dr. Marston then proceeded to the reading of his paper on Diphtheria, when, the twenty minutes allowed for reading having expired, and, the paper not being completed, upon motion of Dr. J. G. Meachem, Sr., the time was extended so as to enable the Doctor to finish the reading of it.

Dr. Griffin then read the paper on Influenza, referred to by Dr. Marston.

Dr. Meachem, Sr.: A very remarkable case has been presented to my notice within the last month. A family living three miles from Racine, on a farm—the house being located in the middle of the farm on a slight eminence and in a healthy situation—had a daughter twenty-three years of age, who was taken with diphtheria. A friend of theirs came from St. Louis about three weeks before this attack, from a family where there had been diphtheria. The young lady died the third day of the attack. Others in the family also took it, and were prostrated. On the other side of the road, within two hundred rods of the location of this house, lived another family. A girl about twenty, residing there, went over to assist the family first attacked. In three days she was taken down with the same disease, and barely escaped with her life. A sister who attended her followed in very quick succession; the hired man, fifty years of age, took it severely; the man owning the farm, who who is not quite fifty years old, is at the present time laboring with it in a very severe form. There had been no diphtheria anywhere around them, so that in these cases it was clearly

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traced back to St. Louis. To me it is a very strong case, showing the portability and contagion of diphtheria poison.

Dr. Wilber: I do not propose to say anything on the subject of diphtheria just now, and I would ask the gentlemen to defer discussion for a little while, as I have a paper treating on the same subject, and perhaps it would be better to have one instead of two discussions.

Dr. J. K. Bartlett: The Committee on Ethics report, in the case of the appeal of Dr. D. W. Lynch from the decision of the Rock River Medical Society of Wisconsin, the following:

Resolved, That, in the opinion of this Committee, after an examination of the testimony upon which the decision of said Rock River Medical Society was based, that there are not sufficient grounds to warrant the reversal of their decision; but recommend that if the defendant can produce new and important evidence tending to exonerate him from the charge which was then brought, that the said Rock River Medical Society should review its former action in the case.

In regard to the suggestions in the President's address which were referred to this Committee for consideration and report, they present the following resolution:

Resolved, That the Committee on Ethics of the Wisconsin State Medical Society approves the suggestions made by its president, Dr. Senn, relating to state legislation regulating medical practice in this state; and recommend the appointment of the committee suggested, to confer with committees of other state societies in the state, for the purpose of preparing a bill to be presented to the next legislature with the view of carrying his recommendations into practical effect; this committee to incorporate in their bill the President's suggestions before named. And the Committee further recommend that the present President appoint a special committee to nominate the committee of conference just mentioned.

Upon motion of Dr. Wilber, the report was adopted.

Dr. E. G. H. Meachem: Your Board of Censors beg leave to report that they have examined the vouchers of the following named applicants for membership of this Society, to-wit:

Knut Hoegh, M. D., of La Crosse, graduate of the University Regiæ Fredericianæ, 1869.

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John F. Pritchard, M. D., of Manitowoc, graduate of Rush Medical College, 1871.

Fred. Simon Luhman, M. D., of Two Rivers, graduate of Rush Medical College, 1877.

Frank S. Reynolds, M. D., of Neosho, graduate of Rush Medical College, 1876.

Daniel McLaren Miller, M. D., of Oconomowoc, graduate of College of Physicians and Surgeons, New York, 1856.

J. E. Newell, M. D., of Waterford, graduate of Rush Medical College, 1871.

Fred. A. Marden, M. D., of Milwaukee, graduate of Long Island College Hospital, 1874.

Wm. D. Morehouse, of Plymouth, a former member, who has been absent from the Society some years, is recommended for reinstatement into membership.

Upon motion of Dr. J. G. Meachem, Sr., the persons above named were admitted members of this Society.

Secretary: According to the programme, the election of officers is set down for to-morrow. We are all aware that the attendance on the last day is small; therefore I move that the election of officers be set down for five o'clock this afternoon. Seconded and carried.

The question of adjournment being put to the Society, the President announced it as lost, and inquired the pleasure of the meeting.

Dr. Whiting: Go on with the regular order of the programme.

President: There is a paper on influenza, read by Dr. Griffin; that is open for discussion.

On motion of Dr. Reynolds, the paper was referred to the Committee on Publication.

The other members of the Committee on the Practice of Medicine, Drs. N. M. Dodson and G. H. Fox, not being present or presenting papers, the next business in order was the report of the Committee on Obstetrics and Gynæcology, Dr. J. K. Bartlett, Chairman.

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Dr. Bartlett: I had written to some thirty or forty members of the profession, who I had hoped would generally answer, and, with their experience and my statistics, expected to be able to make some deductions. I, however, received but nine replies, and several of those were not sufficiently accurate to be used; and I therefore gave that up. I shall ask your attention to some remarks on mechanical and therapeutical aids in labor, and to a brief resume of subjects of recent interest in Obstetrics and Gynæcology.

Dr. Bartlett then proceeded to read his report, but did not complete the same, as the hour for adjournment had arrived.

Secretary: I have a paper on Public Hygiene, which was sent to me by Dr. De Hart, a member of this Society, now residing in New Jersey. The paper was prepared for the recent meeting of the American Medical Association, at Atlanta, but as it failed to reach there in season, he sent it to me to read before this Society. I move its reference to the Committee on Pathology, as the most appropriate committee under the rules of the Society. Also a paper by Dr. Seiler, being the report of a case of Triplets, which I move be referred to the Committee on Obstetrics. Seconded and carried.

On motion of Dr. Wilber, the Society adjourned until two o'clock.

AFTERNOON SESSION, June 4th, 1878.

At half past two the Society was called to order, when Dr. Bartlett read a paper on the subject of Forceps in Labor, completing his report.

On the conclusion of the paper, the President stated that a telegram had been received from the Iowa Medical Society, which he requested the Secretary to read:

DAVENPORT, June 4th.

Nicholas Senn, M. D., President of the Wisconsin State Medical Society:

The Iowa State Medical Society, Twenty-seventh Annual Meeting, sends cordial greetings to the Wisconsin State Medical Society.

A. M. CARPENTER, M. D., President.

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The Secretary moved that the President acknowledge the receipt of the above telegram. Adopted, and the following message sent:

MILWAUKEE, June 4th, 1879.

A. M. Carpenter, M. D., Pres't Iowa State Medical Society:

The Wisconsin State Medical Society, assembled in thirty-third annual session, acknowledges and reciprocates the cordial greetings of the Iowa State Medical Society, and congratulates it upon its honorable record, and advanced position in medical science.

N. SENN, M. D., President.

Secretary: I have two additional papers presented by Dr. Meacher of Portage, which, under the rules, should be referred to the Committee on Surgery. I move that they be so referred. Seconded by Dr. Meachem, of Racine, and carried.

Dr. Whiting: I am not on the floor to enlighten my brethren upon the very elaborate and exhaustive paper presented by the Chairman of the Committee on Obstetrics; yet, I am not willing to have it passed silently into the hands of the Publishing Committee, because I believe after a member of the profession labors to present a paper of this character so clearly, quoting the authorities and giving us conclusions to help us, he ought at least to receive our approbation. It seems to me that, after all, our younger brethren must be in very grave doubt about what they ought to do in regard to the use of the forceps, from this conflicting testimony of veterans in the profession. To my mind, the evil that is done by their improper use is vastly greater than the evil that comes with a dexterous and proper use, and I want to say — if I shall be excused by my brethren — that I do not pretend to speak *ex cathedra* in this matter, or to be wiser than my brethen, old or young, but he who has not learned that the forceps will almost adjust themselves if properly used, is not fit to use them. If he be unskilled, and introduces them by violence, then woe be to the mother, if not to the child.

I once heard, thirty years ago, one of the most eminent men in the profession, who bore the name of the learned and

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distinguished gentleman whose essay we have just heard, say this in his lecture to his class: "Young gentlemen,"—some of you will remember him perhaps; he was physically enfeebled, and sat in his chair, and with his large expressive eyes looking up to the boys—he says: "Young gentlemen, these are terrible instruments in the hands of those who do not appreciate how much damage can be done by their improper or violent use, but, after having practiced the art of obstetricy for nearly thirty years, I desire to say that if I could relieve the terrible sufferings that a mother is called upon to endure, if I could shorten it by three hours, if I believed at the end of three hours she would be safely delivered, I myself would use the forceps." The testimony of that gentleman has rung in my ears since. While I am not an advocate of the early use of forceps, I want to say that if I believed I could relieve the terrible sufferings of some mothers, and shorten labor by three hours by the use of forceps, I would do it.

Dr. Fox: I would like to present Prof. Jenks, of the Chicago Medical College, and hear his opinion on this subject.

Dr. Jenks, who was received with considerable applause, said: My friend has rather sprung a trap upon me, as I came in for the purpose of listening and not for the purpose of making any remarks. Furthermore, I would state that I only had the opportunity of hearing the conclusion of Dr. Bartlett's paper, and hardly know where to begin the discussion. In the matter of discussing the use of forceps I could give my own views, but I would prefer, if you will allow me, to hear the remarks of the society, who have heard the paper from beginning to end, upon it.

Dr. Fox: There is probably no one here who has had more experience than Dr. Jenks, and I would be very glad to hear from him on that part of the paper which he has heard.

Dr. Jenks: I presume there are men here who have had as much experience as I have, and some who have had more, but I hold certain views concerning forceps, and those views have

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been expressed by some of the quotations which I have heard, and yet, not all of my views have been expressed by anything I have heard.

As concerns the use of forceps, I would say, first, it is no argument against their use that one is unskilled. It is no argument against any operation in surgery that a man who is called to perform an operation is unskilled in the performance of such operations. We must assume, then, that the one who is called upon to use the forceps is skilled in their use, and it is no argument against the damage that is done by this very valuable instrument, that the men engaging in practice with no practical knowledge of medicine or obstetrics, should undertake to use an instrument, the use of which they have not been taught, perhaps. So we would exclude the damage done by unskilled men, and argue as to the propriety of the forceps, where the one who undertakes to use them is supposed to be skilled in their use.

It was one of the aphorisms of the ancients that there was no danger to a woman in the first stage of labor, unless from convulsions or from hemorrhage. We may have accidental hemorrhage, of course, where the placenta is prævia, or a woman may have convulsions. The question of labor has been studied, and we understand now why it is that there is no danger to a woman in the first stage. The first stage of labor is believed to be under the control of the ganglionic system of nerves, which never tires out, so to speak. We have the second stage of labor, where we usually apply the forceps, and labor is then under the control of the cerebro-spinal system of nerves, which is easily fatigued. The third stage is under the control or is completed by the ganglionic system. Now, it is in the second stage where we apply the forceps. Here it is that the woman makes the voluntary effort; here she has strength to bear down, not understood by midwives and some physicians. If it is done in the first stage of labor, of course, the voluntary muscles being brought into play, the woman may become fatigued in the first stage. In the second stage is where the fatigue occurs owing to the condition of the nerves.

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It may be given as an obstetric rule, that there is no danger in slowly emptying the uterus of its contents. Now, under what circumstances will we do it? If a woman shows signs of exhaustion, the temperature increasing, or the pulse rapid and feeble, there should be no hesitancy in using the forceps, let the head of the child be in any part of the pelvis, whether at the brim, in the excavation, or at the outlet. This is altogether different teaching from that which many within sound of my voice listened to in their student days. It is possible that many present can recollect when it was even taught that the forceps should never be applied until the fœtal head had rested upon the perineum a certain number of hours, some even allowing it to remain there as long a time as twelve hours; also that the obstetrician must be able to distinguish by touch one or both ears of the child before attempting the use of forceps. Other obstetric rules you have heard which seem to us now equally erroneous and absurd. Such rules are more honored in the breach than in the observance. The forceps should be used before the woman is exhausted, or the child's life is in imminent peril. There can be no established rule as to the proper length of time one should wait in any stage of labor, previous to using the forceps, as the exigencies in individual cases differ as circumstances and persons differ. The time for the use of forceps cannot be measured by the clock. There are cases where the woman has not become exhausted though she may have been in labor ten, twelve or twenty-four hours, where you put your ear down and hear the fœtal heart beat normally, and with no increased frequency, and you can leave the woman. But if on the contrary she has been in labor two or three hours, and you find symptoms of exhaustion, and the beating of the fœtal heart becoming weaker and weaker, and the child's life is threatened, then apply the forceps, regardless of the length of time she has been in labor.

I look upon the forceps as one of the most valuable instruments that a physician has, the value of which cannot be properly estimated, an instrument which has saved the lives

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of thousands of children and mothers. On the other hand, the forceps have done, and are doing, damage in the hands of a class of men who, I believe, are scarce in the medical profession, who would apply the forceps for the sake of getting a larger fee. If there is one who would apply the forceps for the purpose of adding to his revenue, for the sake of putting a few dollars in his pocket, he is not fit to be recognized among the honorable medical men of our United States. I should hope that there is not one to be actuated by that motive, so I would exclude that from the consideration of the use of forceps, the same as I exclude from the consideration the disqualifications of those who make use of them. Of course, there is no question about the necessity of forceps in cases of convulsions or placenta prævia.

Now a point has been made concerning the shortening of suffering. It was stated, if I recollect correctly, that suffering could be shortened by the use of anæsthetics. Mr. President, I would look upon anæsthetics, the frequent use of them, as much more dangerous than I do the forceps, and it may seem strange that I say so. Suffering is shortened unquestionably by their use, and I am satisfied, from my own observation, that the administration of ether, long continued, is more dangerous to the life of the child than chloroform. I can speak from cases which have come under my observation within the past year, cases where labor was normal, where ether had been administered for a length of time, where the child, after delivery, in one case twelve, and in another forty-eight hours when alive, showed all the symptoms of anæsthesia, and death was attributable to an overdose of ether. So I am satisfied that ether and chloroform are opiates which we must administer with caution, and I would much rather use the forceps for the purpose of shortening labor than to give ether. Chloroform I would give under certain circumstances.

A word as to the danger done by forceps. I never have seen a case of fistula from the use of forceps, except in one instance where they were used by a bungler. I have seen,

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within the past few days, a case operated upon by a man who disbelieves in the use of the forceps except as a last resort, and the result was that the head rested upon the perineum for twelve hours, in accordance with the teachings of the obstetricians of the early part of this century. The consequence was that a few days after delivery the entire neck of the uterus sloughed away, perhaps up to the vaginal insertion, and the opening in the wall of the bladder was an inch and a half in diameter. There was a case where the head rested upon the perineum twelve hours. Of course, the rest of the woman's life will be miserable.

As regards the perineum. The perineum is not unfrequently ruptured from forceps, but in the worst cases of rupture I have seen, the forceps were not used. A serious case of perineal tearing is where the rupture occurred after the head passed, where the shoulders tore the perineum.

I have for a number of years been a consulting physician, and, as a consequence, have seen a good many difficult cases, and I have often inquired of doctors if they have had any cases of craniotomy. I asked one: "How many cases of craniotomy have you had?" "Oh, quite a number." "How many times have you applied the forceps?" "Never used the forceps in the world." Here was a man performing craniotomy, destroying the lives of children, who had never used the forceps. How much better it would have been to have used the forceps, and saved the life of the child, even if he had torn the perineum, which could be restored; but the life of the child cannot be restored. I should consider the tearing of the perineum as of little consequence, in comparison to the life of the child. I should tear the perineum if it was necessary and the child's life was in danger, or if there was any fear of delivering a dead child, for the perineum and adjacent parts are subject to repairs; but a woman who has gone through suffering nine months, and then to be delivered of a dead child, when it was in the power of the accoucher to deliver a live child, is a thing not to be lightly considered. But I feel as if I was trenching

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upon your time, and saying too much altogether. [Cries of go on.]

I expected to say nothing, as I came here to listen to this discussion, but this thing presented itself, and I thought I would say a word in favor of the forceps, and concerning their unskilled use, lest some one should advocate their use in every case.

As regards perineal laceration by forceps, before alluded to, I would add, that if the life of the child is not threatened, or the condition of the mother does not demand immediate delivery, the forceps should be removed as the head begins to distend the perineum, thus allowing nature to complete delivery. By pursuing this course, if laceration does occur, it is not chargeable to the use of instruments. As bearing upon that matter, I have seen some midwives who would teach almost any of us a lesson concerning the management of the perineum. In order to preserve the perineum, I think we ought to be very careful how we continue the use of the forceps in the third stage of labor.

I think laceration of the cervix was alluded to by the Doctor as occurring from the use of the forceps. My own observation is that laceration occurs frequently in natural delivery, and you find it always upon the left side.

In conclusion, I would say, lest I be not understood, I would have no rule as to the length of time I would wait before the application of the forceps. I would immediately use the forceps if I deemed that it was necessary for the purpose of saving the life of the child, or for the purpose of shortening labor, or for the purpose of preventing puerperal diseases. I would do it where the woman was threatened in any way, and I would do it whether the head was in one part of the pelvis or the other. It is only within a comparatively recent time that it was considered proper to apply them to the brim of the pelvis, but now it is done without difficulty or danger.

Furthermore, in conclusion, I would say, as I have already stated concerning the use of this instrument, I believe there is

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no danger in slowly emptying the uterus of its contents; and with these points in view the individual cases must be weighed and considered, and whether forceps shall or shall not be used must be decided in individual cases by the obstetrician himself. [Applause.]

Dr. J. K. Bartlett: I am sorry that the doctor did not hear my whole paper read. Perhaps it has claimed to do more than I intended. I intended to enter a protest against the prevalent use — as I estimate it, the too much use — of the forceps. I did not go into the specifications at all of cases where they should be used, merely where they might be. I have had a very large experience since 1848, and I don't think I ever saw a child that I supposed was affected in the least by the use of chloroform or ether. Dr. Reisch, who has written a very valuable paper, gives no warning of the possible danger of chloroform and ether, and states that he used it himself all the time, and regrets exeedingly that one word of his should discourage its use. I think, sir, that it perhaps was a more important paper to the society than the one I read, which was merely for the purpose of showing that statistics of Dr. Hamilton and Dr. George Johnson, and others, were overrated in the opinion of equally able men.

As to the use of forceps. As I stated before I am an advocate of forceps in their proper place. If I saw a woman exhausted in labor I should not hesitate to use them if I had no other means; I should feel it my duty; but the cases where I oppose the use of the forceps are not of that character. I do not advocate their use in the interests of mother and child — and I have stated so positively — where I know the mother will be delivered well, and suffer no more than the usual pain. I claim, sir, from experience, that the pains of labor can be assuaged with the use of anæsthetics in labor given in a proper manner, without the least damage or injury to the mother and child. I claim more than that; I claim that the recovery of the mother afterwards is more quick and more perfect, and that I never have seen any injury to the child. I have not one particle of

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fault to find with my friend from Chicago. He does not, as it appears to me, contradict a word of what I said, or intended to say. He states he is not governed by any rule, but where the indications are that the woman is exhausted, or that by using the forceps he would save the life of the child, he would do so. And if I could shorten the pains of labor by two hours, even if I felt sure that she was doing well — and I don't know but what the gentleman from Chicago said the same thing — I would do it with the forceps. The point we differ on is with anæsthetics. I would simply give anæsthetics and carry the labor through, as I have done hundreds of times.

Dr. Jenks: I do not want the doctor to misunderstand me in any way. I was not criticising his paper at all. My friend was persistent I should say something, so I merely spoke of the forceps. A word as regards anæsthetics,— I use anæsthetics in labor, and shall continue to use them,— but speaking of the comparative danger of anæsthetics, the long use of anæsthetics I regard as more dangerous than the use of forceps under the circumstances in which I consider forceps applicable. That is the point. I do not see as the doctor and myself differ at all concerning the use of the forceps, only I think we differ concerning the use of anæsthetics. I never was convinced until last year that ether was so dangerous to the life of a child; but I could relate a number of cases bearing upon that point, showing that ether is much more dangerous to the life of the child than chloroform.

Dr. Grættinger not being present at this time, Dr. Whyte, the remaining member of this committee, read a paper on Encephaloid Cancer of the Uterus, Complicated with Pregnancy, and, upon motion of Dr. J. G. Meachem, Sr., it was referred to the Committee on Publication.

President: The next report is on Pathology. Dr. Wilber, Chairman of the Committee, is present.

Dr. Wilber then read a paper on Diphtheria, which, on motion of Dr. E. W. Bartlett, was referred to the Committee on Publication.

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Dr. Wilber: The papers of Drs. Marston and Griffin were left over until my paper should be presented to the Society, and were not referred. I suppose they will be proper subjects for consideration at this time.

President: What is the pleasure of the meeting?

Dr. J. G. Meachem, Sr.: I move that the papers be referred to the Committee on Publication. Adopted.

Dr. Goe, of this Committee, not being present, Dr. Williamson, its remaining member, proceeded to read a paper discussing the question, Are the Scrofulides and the Syphilides Pathologically Identical? The twenty minutes having expired before its completion, on motion of Dr. E. W. Bartlett, it was referred to the Committee on Publication.

Dr. E. G. H. Meachem: The Board of Censors desire to present an additional report, and recommend for membership in the Society Dr. Robert W. Earll, of Columbus, graduate of Rush Medical College. Also to introduce to the Society Dr. J. Rea, delegate from the Illinois State Medical Society.

Upon motion of Dr. Reynolds, the report was adopted.

The hour fixed by previous vote for the election of officers having now arrived, the Society proceeded to such election with the following result, Drs. Burns and Dorland having been appointed tellers:

President—Dr. J. G. Meachem, Sr., of Racine.

Vice-Presidents—Drs. S. L. Marston, of Campbellsport, and E. W. Bartlett, of Milwaukee.

Secretary and Treasurer—Dr. J. T. Reeve, of Appleton.

Censor for Three Years—Dr. Wm. Thorndyke, of Milwaukee, in place of Dr. Meachem, term expired.

The several ballots having been cast, while the tellers were counting the same, the President announced that the Finance Committee had examined the report of the Treasurer of this Society for the year 1878, with vouchers for expenditure, and found the same to be correct, and on motion of Dr. Whiting the report was accepted and adopted.

Secretary: I have an amendment to the constitution to

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offer, which can only be adopted by a unanimous vote. It has been prepared by the Chairman of the Committee on Ethics, and is as follows: "All regularly organized county medical societies in this state may elect delegates to this Society in the ratio of one for every five of its members, and such delegates shall, on payment of the annual dues, be entitled to all the privileges of membership in this Society during the time for which they are elected." The proposed amendment is almost a copy of section 1433 of the revised statutes of this state. I move the adoption of this amendment to the constitution, to be known as Article No. 12, and that Articles 12, 13 and 14 be numbered 13, 14 and 15, respectively.

Seconded.

Dr. J. K. Bartlett: I think it is very desirable to pass this amendment, and we can pass it, if done unanimously.

Dr. Reynolds: I have an impression that it requires some notice from one year to another, to amend the constitution.

President: Not by a unanimous vote. The last section of the constitution reads, "Provided, however, that by a unanimous vote of ten or more members present at any annual meeting, any article of this constitution may be amended or repealed, and articles added thereto, without such previous notice."

Dr. Day: I beg leave to amend that by referring it to the Committee on the Revision of the Constitution and By-Laws.

Secretary: There is no such committee.

Dr. E. W. Bartlett: It is simply an addition to our constitution, so as to make it conform to the law in its reading. I hope it will pass, and that every gentleman will vote for it.

Dr. J. K. Bartlett: I do not know whether it is necessary to say anything more about it. This article originally was a part of the constitution of the old State Medical Society, and was accidentally omitted when the society was reorganized. It is a part of the organic law.

The question was then put, and the President announced that it was unanimously carried and adopted.

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Dr. E. W. Bartlett: I offer the following resolution:

Resolved, That Article 1 of the constitution of this Society be and the same hereby is altered so as to read as follows:

"ARTICLE 1. This organization shall be known by the name of the State Medical Society of Wisconsin."

It is simply so as to change the name of our Society, or change the recitation to conform to the statute. The principal reason for making this suggestion is that one of our members brought a case for fees in a justice's court, and the lawyer said that the Society to which this gentleman said he belonged was not the same as named in the statute, and he was non-suited on that ground; and if we make this little alteration that gentleman can go before that same justice and gain his case.

Dr. Whiting: I stand by old names. The revised statutes may be changed next year, and then some of us may have to go into court on account of that change, and thus it would place us in an awkward position.

Secretary: I second Dr. Bartlett's motion.

Dr. Day: If Dr. Whiting refers to the old state laws he will find it reads State Medical Society of Wisconsin. It is contended that any member of this society will find that he was not a member of what is called in the statutes the Medical Society of the State of Wisconsin, unless we adopt this amendment, as they are two different societies in the eyes of the law. And I would further propose that if we change the name from the State Medical Society, we change it to the Medical Association of the State of Wisconsin, as the name Association means something higher than a common ordinary society. There is more significance in the term association than in society, as, for instance, in the American Medical Association, and others. I would also propose that article second be changed so as to read "members and fellows"; that we have a grade in our membership; that those who have borne the heat and burden of the day —

President: I shall have to call the member to order.

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Dr. E. H. G. Meachem: I see no necessity in changing the name to meet contingencies like that spoken of. When you sue for an account, you do not sue in the name of the Medical Society, or the State Medical Society, but simply sue as for any ordinary indebtedness. It is an individual suit, and you don't sue in the name of the society.

Dr. E. W. Bartlett: I am sure that the gentleman has not read this pamphlet which we have here for the purpose of giving information to the members of this Society. The state law which went into force, I think, last November, distinctly says that one of the qualifications in order to give testimony is that the person is a member of this state society, or have a diploma from it, or of some legal county society, or some incorporated medical institution, and he must show that the institution from which he obtains his diploma is legally incorporated. It strikes me that it is a very simple matter, the only question being where shall we put the word Wisconsin. We want to simplify this matter so that nobody can stumble over it. It does not change our Society. We are incorporated, and have all the privileges belonging to it, since about 1841, and it is not the idea that we should change our Society at all, but simply to make it perfectly plain so that no one can have any question in regard to this matter. It is very necessary when we talk about legislation in regard to the practice of medicine, that we should without any doubt at all make ourselves a legally organized body, and that is the principal reason for bringing this matter up before you.

President: The question is whether we shall adopt this amendment.

Dr. J. K. Bartlett: I hope it will be adopted.

President: It will have to be unanimous. Are you ready for the question?

The question being put, the President announced it was unanimously carried and adopted.

Article II of the constitution was also amended, by unani-

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mous vote, by erasing the word seven therefrom and inserting in lieu thereof the word eight.

Dr. J. K. Bartlett: On behalf of the Board of Censors, I wish to report one more name, viz: Dr. J. A. Russell, of Cedarburg, graduate of Rush Medical College, 1877.

Upon motion of Dr. Wenzel, the report was adopted.

Secretary: I have the following resolution to offer:

Resolved, That the State Medical Society of Wisconsin recommends the adoption of the metric system of weights and measures, and that in future that system be used in its printed transactions.

The metric system was adopted by the American Association at Atlanta, and is largely in use throughout the civilized world; and I believe it would be right for this Society to encourage its introduction in this way.

Dr. Wilber seconded the motion, and after some discussion the resolution was adopted, and on motion of Dr. Whiting the Secretary was directed to insert in the next volume of the Transactions, tables showing the relative value of the weights and measures in common use and those of the metric system.

A communication was received from Dr. D. Betzel, asking the acceptance of his resignation as a member of the Society, which was granted.

On motion of Dr. Wilber the Society adjourned until half-past seven this evening.

WEDNESDAY EVENING, June 4th, 1879.

Society called to order at eight o'clock by the President, who announced that next in order was the report of the Committee on New Remedies, Dr. H. P. Wenzel, Chairman.

Dr. Wenzel: Owing to the death of one of the committee, and an inability to attend on the part of the other, my report is probably longer than it would have otherwise been, and if I shall exceed the allotted time of twenty minutes, I hope the President will call me down at the proper time.

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The Doctor then proceeded to the reading of his report until, the twenty minutes having expired, and the paper not being finished, upon motion of Dr. Day it was referred to the Committee on Publication.

President: I notice there is one member of the Committee on Surgery present, who was absent this morning. Shall we refer back and listen to his report?

Upon motion of Dr. Reynolds, it was moved and carried that Dr. Rogers be heard.

Dr. Rogers: I regret exceedingly that I came here without a report. I don't know that I have any justifiable excuse to make to you for not having one, consequently I have nothing to say.

President: Then we will proceed with the next regular business, viz., the report of the Committee on New Medical Literature. Are any of the members present? There being no response, the next business is the report of the Committee on Ophthalmology and Otology, Dr. E. W. Bartlett, Chairman.

Dr. E. W. Bartlett: Your Committee has been so busy with other affairs, that my report is not quite ready, and I would request that it be referred to the proper committee.

A member moved that it be referred to the Committee on Publication when completed. Adopted.

President: As Dr. Ottilie, remaining member of this Committee, is not present, we will take up reports under the head of Special Committees.

Dr. J. K. Bartlett: There are two short reports, which have been referred to the Committee on Obstetrics, which are approved for reading before the Society. One is a Report of a Case of Triplets by Dr. George Seiler, and the other a Report of a Case of Ovariotomy, by Dr. William Fox.

Upon motion of Dr. Youmans the papers were referred to the Committee on Publication, without reading.

Dr. Day: Under a suspension of the rules, I move that Dr. J. G. Meachem, Jr., now have the floor to make report of a case of Osteocephaloma of the thigh.

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Adopted, and the paper, which was illustrated by a series of photographs and by the exhibition of the diseased bones, which had been removed after death, having been read, upon motion it was referred to the Committee on Publication.

Dr. Wilber: I move that the Committee on New Medical Literature be dropped from the list of Standing Committees, and that there be added to the list of Standing Committees, one on the subject of Neurology, and another on Public Health and Hygiene. In reference to the first proposed committee, when we bear in mind that twelve per cent. of all the reported mortality of England (from statistics on the subject) results from diseases of the nervous system, the importance of a committee on the subject of Neurology will force itself, it seems to me, on the consideration of all the members of this Society, and speak very loudly in behalf of the establishment of such a permanent committee.

A member: Divide your proposition.

Dr. Wilber: I move that the Committee on New Medical Literature be stricken from the list of standing committees.

Dr. J. K. Bartlett: I second it, but only for the reason that we are getting crowded for time. If there be any virtue in this committee, let us continue it, and if there be not, why, we want all the time we can get. All the reports from the regular committees are not half read and discussed, because we try to run through the whole thing in one day or a day and a half; and if we appoint other committees in place of this, I don't know but we shall be worse off than before.

Dr. Wilber: In regard to the want of time, what the doctor says may be true, but in the report of a committee, even though we may not have time to listen to and discuss it here, it is possible that something may be presented that will be of value afterwards for reflection when reading it at our leisure. But this Committee on New Medical Literature, is merely a means of advertising certain books. We get nothing about the contents of the books, and no particular benefit from such notices

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of them. We all take the same journals, or, if not, we can get catalogues, and hence I propose that that particular committee be dispensed with.

Dr. E. W. Bartlett: I hope this committee will not be dispensed with, for if anything be important to this Society, it is that the members may become aquainted with all the new medcal literature that there is, no matter whether by means of advertisements or not. If the committee that is formed for that purpose will collect a list of all the books and present it to the Society, it will be a matter of importance. I ask the gentleman if the report that was offered last year was not a good one and valuable to our Society? I hope that this matter will be considered, and deliberately considered, before any such thing be done. Therefore, I move that this matter be laid on the table.

Seconded by Dr. J. G. Meachem, Sr., of Racine, and being put to the meeting, the President announced that the motion of Dr. Wilber was laid on the table.

Upon motion of Dr. E. W. Bartlett the Society adjourned until Thursday morning at half past eight.

THURSDAY MORNING, June 5th, 1879.

Society called to order at nine o'clock A. M.

President: We are still under the head of Voluntary Reports. We will call upon Dr. Hoegh.

Dr. Hoegh proceeded to read a paper on Ovariotomy until, the twenty minutes having expired and the paper not being completed, he was interrupted by the President, who inquired, "Shall we proceed with the paper, or continue the discussion?"

Dr. J. K. Bartlett moved that Dr. Hoegh be permitted to complete the reading of the same. Seconded and carried, and the paper read to completion.

Dr. E. W. Bartlett: The gentleman refers to the use of animal ligatures, and I understood him to say he didn't know by whom they had been recommended. It is my impression

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that they have been recommended by a member of this Society a long time ago. And if any gentleman can gain any credit by having his name mentioned, I hope some of the members who are aware who the gentleman was, will mention his name.

Dr. Hoegh: I am of the impression it was Dr. Palmer, of Janesville, but not being certain, I have refrained from mentioning his name.

President: For the information of this convention I will say that the late Professor Levi used it more than thirty years ago. I think he was the first one to use animal ligatures in this country.

Secretary: Here is a paper by Dr. Palmer on Ovariotomy, recommended by the committee to whom it was referred.

Dr. Hoegh: I move that the paper be referred to the Committee on Publication. Seconded and carried.

Dr. Davis: In connection with the paper just read on Ovariotomy, I wish to call the attention of the Society to a peculiar pathological condition of the peritoneum which came under my observation in a case of ovarian tumor. My patient was sixty-one years of age, always in good health until about four years before the diagnosis of ovarian dropsy. She was the mother of six children, and at fifty-one had ceased to menstruate, without any of the annoying ailments which usually afflict the female at that critical period of life. In September, 1877, I first examined the patient and diagnosed an ovarian tumor, and also advised ovariotomy. But neither patient nor friends would consent to an operation until after the lapse of half a year. Within this period the patient had visited Dr. W. H. Byford, of Chicago, who confirmed the diagnosis, and advised an operation. On the ninth of April, 1878, with the assistance of Dr. Wm. Meacher and son, a medical student of Portage, Dr. Geo. W. Jenkins of Kilbourn City, and Dr. Chas. Cowles of Baraboo, I removed the tumor. The incision, made through the linea alba, was seven inches in length. When the deep tissues were divided the abdominal walls receded fully

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three inches at the center of the incision, revealing what was supposed to be the cyst wall, having the usual bluish pearly appearance. With the sound I explored for adhesions, and found scarcely any on the entire anterior surface, except at the umbilicus, where the adhesion was very firm. About seven inches on either side of the centre of the incision the adhesions were firm and continuous. At the lower point of the incision, and at two and a half to three inches above the umbilicus the adhesions were firm and continuous. As the tumor was large—weighing forty-eight pounds—the incision was extended round to the left of the umbilicus, about three inches. In doing this, what was supposed to be the cyst was cut a very little, when it was discovered that the true cyst wall had not been reached. It appeared as though the peritoneum lining the anterior portion of the abdominal cavity, with the exception of a small point at the umbilicus, had been dissected up, and formed an apron-like covering which varied in thickness, where it was divided, from one-sixteenth to one-eighth of an inch. The internal surface of the abdominal wall was examined and had every appearance of being healthy peritoneum, as also did the internal surface of the apron-like covering. The adhesions of the tumor were very slight, offering no obstructions to removal. The contents of the tumor were very thick, viscid and gelatinous. The base was one mass of malignant disease, having the appearance of amyloid degeneration. The cyst wall, at the base, would scarcely hold together for removal.

If any member of the Society has ever seen or heard of a similar case, I would like to know it. Dr. Byford has told me that he never heard of such a case. Dr. Palmer, of Janesville, told me yesterday that he had had a case which, in some respects, was slightly analogous, though not malignant. My patient survived the operation a little more than 48 hours.

Dr. Meacher: I wish to say a few words in regard to the use of the clamp. I believe that the clamp is the safest of all, and it seems that in the hands of Spencer Wells, who has been said to be the greatest living ovariotomist — certainly he is, as

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far as numbers are concerned — that the treatment by the clamp is the safest. Of course, there is danger in that plan of treatment, but I believe on the whole that it is the safest. If we treat the pedicle by ligature and return it to the peritoneal cavity, that portion included within the ligature very often, I think, becomes dead matter eventually, and dead substances are more or less infectious. It is true, there will be no necessity for the clamp if the case is trifling, but I believe that for the peritoneal cavity it is best; it holds the pedicle and the parts well up, and there is less chance for accumulation of fluid, and more chance for adhesion and recovery in that way than any other. Certainly the experience of Wells in thirty consecutive cases performed, adds a great deal, I believe, in favor of the clamp.

Now, in regard to animal or silk ligatures, I believe silk is superior to animal ligature, for the reason that the animal ligature is more liable to become softened than the silk. In my experience I have repeatedly left the silk ligatures within the peritoneal cavity, and I believe they hold and are taken care of as well, if not better than animal ligatures.

I think Dr. Fox might make a few remarks in regard to the clamp.

Dr. Fox: I operated on a case here last December, the history of which I handed in; and I used the animal ligature. I think that if I had used the clamp or a silk ligature, my patient would have lived. She lived, as it was, 31 days. The patient was about 35 years old; had suffered from this growth for about five years; which adhered to nearly everything it came in contact with. We operated antiseptically, and at death, two weeks after, we made an autopsy and found great quantities of partially organized clots in different stages of organization, and a great deal of fluid in the perineal cavity. We believed the deer tendons loosened and let go, and that she died of hemorrhage from the pedicle.

Dr. Davis: In that case, was it cut short?

Dr. Fox: Cut short and laid back.

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Dr. Davis: In a case about three years ago, which Dr. Witter and myself attended, a silk ligature was applied, and it was a long time in coming away, but the case was a successful one.

Dr. Fox: We used the deer tendons in sewing up, and you could trace the wound three days afterwards. These were too soft, and had let go.

Dr. Russell: I wish to enquire of Dr. Fox what evidence he has that the ligature was inefficient to secure the vessels.

Dr. Fox: Simply the fact that bleeding occurred from the stump, which was examined after death, and that no plugged vessels could be found.

Dr. Russell: In my experience of securing vessels with deer tendons, I have never known one to let go at all. They will secure the vessels perfectly, properly and correctly, are as good as silk, in my experience, and I think very much better.

In regard to the operations with ovarian tumors, and securing pedicles, I have not had much experience myself. I have operated four times, once by clamp, the pedicle outside—with Wells clamp, or something similar to that—the case recovered. I have operated since then, not under any antiseptic plan of treatment, three times, with two recoveries, where I have used silk ligatures, leaving them out to act as drainage tubes. I took no particular pains to operate antiseptically. In one of the cases I kept a record of the temperature, which never went above 100½; the pulse was never over 105; and fifteen days after the operation she was so far recovered as to return to her home, eight miles, in a lumber wagon. As far as my experience goes, if I were to operate to-day on an ovarian tumor, I should use no clamps, but should tie with silk.

Dr. Fox: Silk might hold when the deer tendons would not. It is possible we did not prepare the deer tendons properly. They were prepared by a man who uses them a great deal, and one in whom we had implicit confidence. It was Dr. Mason.

Dr. Hoegh: Is there any objection to silk? It seems to be admitted by all that it is perfectly safe, and as long as there is that admission, I want to know the reason for discarding it.

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President: That is a very important question, and one of great practical interest.

Dr. Whiting: I want to know why we discard silk. We seem to regard silk as something entirely different from animal fibre. It is so nearly allied to animal tissue, and the results show that after it has been used upon the pedicle, and the patient died, it has been so incorporated into the tissue, that certainly it seems to me to be safe; and while I have a good deal of faith in the ability of the deer-tendons to stay in place till recovery has taken place,—if recovery follows,—I do not see what advantage they have over silk. If you show me in a single case—and that has been demonstrated in more cases than one—that the silk ligature is not incorporated by nature into the tissue, and afterwards that the patient fully recovered, then I say I don't know what better ligature is needed.

Dr. Strong: I belong to the fogy class, with my friends Russell and Whiting. The last amputation of the leg I performed, I tried to experiment a little upon this very question. I used silk. I cut the ends of the ligatures not very short, and did not touch them at all. That silk was covered and incorporated as handsomely as anything was ever effected; no pieces ever came out, and no irritation ever resulted from it. I would not hesitate now at any time to leave a reasonable amount of silk in any granulating surface.

Dr. Reynolds: This discussion reminds me of some objections to animal ligatures—not to the silk. I remember that in the army, in the division where I was engaged, we had a fanciful medical director, who had occasion to operate some. In three of his operations he used animal ligature; one of them gave way, one of the patients bled to death, and in the other we had to ligate the femoral artery. I have never trusted in any operations to anything else but silk, or fibre of that kind; and I have had no reason to mistrust it in any case. I remember an amputation once where I left the ligatures out as usual, and one of them—I think it was at the femoral artery—remained

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there for two years, and I was much chagrined over it. After a month or a few weeks I endeavored to slip it over. I don't think it ever came off. I think it is there yet. The stump was all healed up, except that around the ligature there seemed to be a little mite of moisture. I snipped it off as far as I could reach, and thought I would get the end out. The man forbade it, and I have not since heard anything of this case. That was some seven years ago.

Dr. Brett: Once I removed a considerable sized tumor and ligated with a large silk ligature, and for some little time, as the healing process progressed, I dug away at that silk ligature hoping it would come off, until there was not a particle of discharge, when I snipped it off. While speaking I would like to enquire the experience of medical men in the use of carbolized silk. Does the saturation of silk with carbolic acid aid the liability of non-irritation?

Dr. Russell: As far as I can bear any testimony on that, I have been in the habit of carbolizing all my ligatures, and shall continue to do so, as I prefer it. I think it does rid them of a certain amount of irritation that silk would produce if not carbolized.

Dr. Whiting: What strength do you use the carbolic acid to carbolize your ligatures?

Dr. Russell: I usually, in carbolizing silk ligatures, use about 16 per cent.

Dr. Whiting: What do you use, glycerine or water?

Dr. Russell: Water.

Dr. Whiting: I regret very much that I was so situated yesterday morning in the committee room that I did not hear the papers of two of the gentlemen on diphtheria. I understand that Dr. Marston presented a very well gotten up paper, which has been referred. It was a paper that he had spent a good deal of time over; he had corresponded with various physicians in the state, and had, substantially, their replies.

Now, I want to ask here whether Dr. Marston offered anything in the way of treatment of that disease, with the results;

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or whether, through his correspondence with other physicians, he learned from them their treatment and results in a given number of cases; how many of them were fatal, and the recoveries, and under what circumstances.

I have called this paper up because it was my fortune to know the author years ago, when we were down South. I know him to be a very careful, faithful, honest man, as all doctors are bound to be. I would like to know more about his paper, and if there is anything in the treatment or results that will be advantageous to us, I think we ought to call it up, because this disease is a scourge and a terror to us all, and while we are interested in theories and in lesions, still they do not help us to treat the disease successfully. Now I, for myself, really want to know all I can from these papers about the treatment.

President: Is it to bring up a discussion? The paper has been referred to the Committee on Publication.

Dr. Whiting: Will you allow me to ask whether the papers go into the treatment, and furnish results of various practitioners?

Dr. Marston: The limit assigned the paper that I presented would not permit of my reporting in detail the different plans of treatment practiced, or of my relating the experience of my correspondents with different therapeutic agents in diphtheria. Many believe the disease to be primarily a local affection, and endeavor to prevent systemic poisoning and the attendant phenomena (which they regard as secondary manifestations) that may or may not occur, by early and persistent local treatment. Others believe the local lesions to be secondary, and dependent upon primary systemic infection, and regard early constitutional treatment as of paramount importance. My opinion is that it is primarily a constitutional disease, a blood poisoning, and that medical treatment should be both general and local: general, to prevent or modify morbid changes, and to sustain or recuperate the patient; local, to prevent putrefactive changes and septic poisoning. The constitutional remedies that I believe to be the most beneficial, and upon which I rely, are whisky, quinine,

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and the muriated tincture of iron. I treat the local inflammations of the fauces and nasal passages with such antiseptics as chlorine water or carbolic acid properly diluted. I have witnessed marked benefit in cases of obstructive diphtheritic laryngitis from inhaling the vapor of slaking lime, as recommended by Dr. Geiger, of Dayton, Ohio.

On motion, Dr. Hoegh's paper on Ovariotomy was referred to the Committee on Publication.

The Censors made report recommending the admission of J. E. MacNeill, of Mauston, Wis., graduate of Chicago Medical College, 1878. The report was accepted and adopted.

Dr. Whiting: I should like that fifteen minutes be set apart for the discussion of this question of treating diphtheria.

On motion fifteen minutes was set apart for this discussion.

Dr. Whiting: I want to know more of Dr. Marston about what quantity he uses the whisky in, when he begins to use it, and for what purpose he uses it.

Dr. Marston: In the first place I use alcohol in large quantities. I generally use Bourbon whisky. This I give freely; to a child five years old with a severe form of the disease I have given a tablespoonful every hour during four successive days, with a good result and without inducing intoxication. Dr. E. N. Chapman, of Brooklyn, N. Y., says, in a valuable monograph entitled Antagonism of Alcohol and Diphtheria, published in 1878, that "alcohol is as antagonistic to diphtheria as belladonna to opium or quinine to malaria." I am inclined, from my own experience with alcoholic stimulants in the treatment of this disease, to endorse this statement of Dr. Chapman's; its *modus operandi* I cannot explain, and have to confess that I gave it empirically; but its effect is, *when given in large and frequently repeated doses*, to reduce the pulse, lower the temperature, and subdue the inflammation. I am of the same opinion as Dr. Chapman, that "the quantity of alcohol given should be regulated by the volume of the circulation and the malignancy of the disease, and not by the rules applicable to ordinary cases." I usually give quinine in small doses as a tonic to the ganglionic

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nervous system, and in combination with the whisky, but in cases where there is headache, with high temperature, vomiting, and symptoms of septic poisoning, I give the quinine in full doses, but I do not persist in its use in full doses if benefit fails to result in thirty-six or forty-eight hours. In most cases I give the tinct. ferri. chloridi in doses of from twenty to sixty drops (largely diluted with water and glycerine), for an adult, and in proportionate doses for children, every two or three or four hours, from the beginning of the disease, together with the whisky and quinine. But cases are not infrequent in which neither quinine or iron will be retained in the stomach; in such cases our only reliance is on alcoholic stimulants. In all cases I give the alcohol from the beginning, and until the violence of the disease has abated, when I gradually withhold the stimulant, relying more on the quinine and tincture of iron to recuperate and restore the patient. The local application of such antiseptics as chlorine water, carbolic acid or permanganate of potash, properly diluted, I believe to be useful in preventing the formation and absorption of septic poison, but I have no confidence in them or such agents as the sulpho. carbolate of soda or potash, salycilic acid, sulphuric acid, or any medicines of this class, when administered as constitutional remedies and with the view of destroying or neutralizing the diphtheritic poison; they may be useful in the *secondary* septic poisoning that occasionally occurs in the course of the disease. The chlorate of potassa, a valuable remedy for simple or catarrhal inflammation of the fauces, does not influence in any way (when used locally and administered internally) the specific inflammation of diphtheria. The persistent use of this drug in large and frequent doses may possibly originate or hasten the development of diphtheritic nephritis.

In the treatment of diphtheria, alimentation becomes a question of importance. Food should be given regularly and at short intervals, particularly through the night, when the vital powers are at the lowest ebb. In severe cases the patient should be aroused from sleep to administer food and medicine.

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The apparent sleep is the slumber of toxæmia, and should be interrupted at stated times. I have found milk, when given with lime-water, preferable to any other article of food that I have used. I have seven parts of milk mixed with one of lime-water, and give to an adult three or four pints every twenty-four hours, at given intervals of time and in larger or smaller quantities.

Dr. Whiting: The main point was about your alcoholic treatment. I would like to hear from Dr. Favill on the subject of diphtheria.

Dr. Favill: I have nothing specially to say upon that subject, entertaining no special views.

Dr. Wight: It seems to me that the treatment of diphtheria must depend in a great measure upon the pathology of the disease. Recently there have been some profound studies made with reference to the disease. Professors Oertel, Thomassi, Ebert, von Recklinhausen and other prominent medical students and practitioners in Germany, have come to the conclusion, after a careful study with powerful microscopes, that it is dependent upon a vegetable organism, and is a direct result of this organism. Oertel and Kohn have studied it in what they call a propagating room. It has been found in the blood and in the mucous membrane. They have subjected this organism to various tests in order to ascertain its resistance to certain remedies. It was subjected by Oertel to the cold of five degrees Fahrenheit below freezing. Its propagation was checked, but when the temperature was raised it went on multiplying itself. It seems to me, after a careful study, that the conclusions of those men are correct. They satisfy my mind that such is the real nature of the disease, and in order to treat it, therefore, it is necessary to combat this organism. I have no doubt stimulants in sustaining the vital forces might tide the patient over; but that alcohol is an antidote to the disease, as Professor Chapman says, I do not believe at all. I know Professor Chapman very well; he has a good many theories, and is very eccentric in getting at some of his conclusions. This organism has been sub-

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jected to various remedies — chlorate of potash, bromide of potash, etc. Even a weak solution of permanganate of potash prevents its propagation.

When I was in active practice I used, as a gargle, permanganate of potash, with the treatment of alcohol, and found better results from it than anything else I used.

One other point in this connection. Our efforts perhaps would be more effective in preventing the spread of the disease than any other. These organisms have their growth from seeds. To raise a crop of wheat it is necessary to have the proper soil, temperature, and the seed. Sow wheat in the snow, and you get no crop; on the pavement, and you get no crop; on poor soil, and you get a thin crop; cultivate your soil — manure it, harrow it, prepare it, put good seed in it, and you will get a good crop. So with this disease. You must have your prepared soil, and your seed, and other favorable conditions, and you will get an epidemic, or a full crop of the disease. I have noticed in this city it is most prevalent where there are filthy conditions and uncleanliness, broken sewer-pipes and defective drains. That is the soil upon which it grows. Eradicate those conditions, and you get a poor soil and have a poor crop of diphtheria. Combat the filth conditions, and the disease will soon disappear. Isolate the patients who are laboring under the disease, and in that way you arrest the disease, cutting off the sources of the seed, and save a large mortality, for the mortality of this disease is frightful.

Dr. J. G. Meachem, Sr.: I have been in the habit of treating diphtheria for years with chlorate of potash and iron. I have used the bromide with good effect also. A common prescription with me is the following:

℞ Chlorate of Potass., 2 drachms or 8 grammes;
Tinct. Chloride of Iron, 3 drachms or 12 grammes;
Distilled Water, 4 ounces or 128 grammes.
Mix. Directions: a teaspoonful in water every two hours for an adult.

Dr. Whiting: It seems to me we cannot have a more im-

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portant subject for discussion, and I am constrained to ask the indulgence of this body for an extension of fifteen minutes more.

Dr. J. G. Meachem, Jr.: I move that it be allowed. Carried.

Dr. Hunt: In the course of some fifteen or eighteen years' practice it has been my lot to treat a considerable number of patients, and the treatment was substantially as recommended by Dr. Marston, viz., quinine, iron and whisky. But of late I have somewhat modified my plan of treatment. I have treated quite a number of cases lately with the bromide of potash, and a small quantity of stimulants, and I am unable to say which plan of treatment is best. I am inclined to think that the character of the disease has changed; that is, I think the cases in later years are more mild, and not what you could term asthenic, as they were ten or eighteen years ago. In malignant severe cases of diphtheria I should trust to quinine, whisky and iron, with local applications of either carbolic acid or nitrate of silver. In regard to this disease being a filth disease as expressed by Dr. Wight, I don't believe it. If it is, it was unfortunate for the people of Wisconsin, in 1858 and 1859, to become so filthy, for we all know that the disease was almost unknown in this state up to that time. In reading the history of this disease for the past three or four hundred years, you will find in Europe that the epidemic — diphtheria — would run its course for six, eight or ten years and then disappear. Now I want to know if that was caused, or prevented, or annihilated by the sanitary condition of the barbarous and half-civilized nations of Europe? If it was, I hope that in this city, and in the country towns and villages of this state, we may have boards of health established who will eradicate this foul disease.

Dr. Whiting: I want to be enlightened. What do you do for this disease?

Dr. Gorham: I have treated diphtheria always as a specific disease, a poison that affects the whole system, a poison acting very much like scarlatina. In treating my cases with stimulants I have always been successful. I have seen cases of diphtheria where the nervous system was so depressed that the patient died

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before there was any deposit in the throat. Now it is my candid opinion that we must treat the disease as a specific poison, as it acts upon the human system very much like scarlatina, that is, you find the kidneys always congested, but we do not always have deposit in the throat. I make distinction between diphtheria and croup. The membranous croup attacks the vocal organs. My experience so far has been, it must be treated very boldly to be treated successfully.

Dr. Marston: I fully agree with Dr. Wight, that unsanitary conditions favor the spreading of diphtheria, and that isolation and cleanliness may prevent endemic outbreaks, and mitigate the virulence of the disease; but I cannot accept the conclusions of those who regard diphtheria as a disease that may be spontaneously originated by filth causes. It has not been proved that any definite combinations of filth can, either by chemical action or germ productivity, originate the active principle of any specific disease that may be transmitted indefinitely. Unsanitary conditions evidently operate to predispose to the disease by so affecting the organism as to increase the individual susceptibility to the action of the diphtheritic poison. The theory (alluded to by Dr. Wight) that diphtheria is primarily a local affection, its active principle being a minute vegetable organism, is rejected by many distinguished histologists and microscopists. Panum, Bergman, Bilroth, Hiller, Beale, Heitzman and Satterthwait, do not regard the micrococci of Oertel as the special noxa of the disease, but only as a correlative product. Satterthwaite, who has made diphtheria a subject of special study, declares that he has failed to find any vegetable organisms in patients suffering from diphtheria, that he has not found in the system at other times and under circumstances not incompatible with health. Among the leading practitioners and authors who also reject the theory of Oertel are Doctors Jacobi, J. Lewis Smith, Beverly Robinson, Chapman and Mackenzie. The decision of the section on Sanitary Science of the International Medical Congress of 1876 was that there is no satisfactory proof that diphtheria is necessarily connected with minute vegetable

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organisms, and I am not aware that any evidence has been presented to the profession since that time that would reverse this decision of the section. The experience of the profession during the past twenty-five years has fully demonstrated that in diphtheria early constitutional treatment is of the utmost importance, and any theory of the disease that does not recognize this fact may do immense harm. If we accept the statement of Oertel that we have to deal with a disease that is at first localized at the point upon the surface where the micrococci is received, we might be inclined to imitate the practice of Trousseau (who believed the disease to be at first a local affection), and attack the pseudo membrane with what he designates savage energy. If, however, we were not disposed to resort to harsh remedies, we might rely upon the local application of mild disinfectants. Constitutional remedies would hold the second place, and would only be resorted to when local treatment had failed to destroy the micrococci, and the second stage, or that of general infection, had commenced. Then, our object being to destroy this vegetable organism in the fluids of the body, we might be induced to rely upon the internal administration of antiseptic drugs, and these would necessarily fail to destroy the swarming billions of micrococci, as a sufficient quantity could not be safely administered to disinfect the eighteen pounds of blood in the body of a patient weighing 145 pounds. The facts are that we are unable to rationally administer any therapeutic agent to destroy or antidote the poison, as its real nature is still uncertain; yet it is probable that the matter is particulate or molecular in form, and in no sense a soluble substance.

Dr. Wight: I am afraid I expressed myself so indefinitely on one point that I was not understood. I don't mean to say that any parts of filth would produce this disease, but it favors its growth and spread; when the filth conditions are favorable then we have a more abundant crop or outbreak of the disease.

Dr. Whiting: I confess to having some confidence in Prof. Chapman; in his judgment, and in what he says. He is a

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man of brains, but he is eccentric. He is a graduate of Yale University. He talks facts or what he believes to be facts, but I never knew of his theorizing, as my friend says.

Now these things must arrest our attention; when you can give a child half a glass of Bourbon whisky every hour and not have a single symptom of intoxication, there is something peculiar in the situation. That fact alone arrests my attention. I have been fortunate in not having many cases of diphtheria to treat, but since writing Prof. Chapman, I have treated every case with alcohol, as he so indicated, and I have never seen a particle of intoxication. I said, what can be done with the alcohol that this child has taken? I have only treated four cases of diphtheria with alcohol. Thank God, all have recovered. I don't say they would not have recovered otherwise, but I was amazed that I discovered no appearance of intoxication, any more than if I had given them so much mere milk.

The report of the special committee that was appointed last year in regard to quackery and to prevent unqualified persons from practicing in the State of Wisconsin being now called for, Dr. E. W. Bartlett, Chairman of said Committee, read a report, which, on motion of Dr. Strong, was accepted and referred to the committee provided on this subject for the ensuing year.

Dr. Strong: I desire to say one word in making this motion. We are told that this state organization is a power for good or ill in the state, and that the legislature may act upon the suggestions of the Society when the Society moves unitedly and harmoniously. It is my desire, and I have no doubt it is the desire of all, that this should be accomplished. It is a subject that has been agitated for two or three years past, but to frame any law that will just suit the peculiar ideas of every member of the society, I think, will be difficult to accomplish. I presume that these gentlemen wish to attain the same ends that I do, and I suppose we all do. If each one will try to get over anything that may be disagreeable or distasteful, waive minor objections, and act in unison, I think we shall succeed.

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Dr. Reynolds, from the same committee, said: I have a report here that will take in reading over double the time that is allowed, and as time is valuable I would submit it without attempting to read it.

President: What is the pleasure of the meeting?

Dr. J. K. Bartlett: I move that it be referred to the Committee on Medical Legislation. Carried.

Dr. Reynolds: My idea is that in any legislation on this matter the people should be the ones to move. We, as conservators of the public health, are interested in all that affects the people; but that the medical profession, as such, needs or requires any special legislation for our benefit, I deny. We have withstood the assaults of quackery since we were a body, and since my remembrance, and have withstood it successfully. But the people are injured in pocket and life every year and every day. Our President has recommended a law which all of us I think would be willing to see in force. The law that was introduced last winter had substantially all of those points in it. But a law that has no ten years' clause, I think cannot be passed, and if passed, would be rescinded in a year or two afterwards. I think the people are more interested in this law than the profession. I was astonished myself at the number of letters I received from laymen outside of the profession. I was more astonished when I found the only organized opposition to that bill came from the city of Milwaukee. The profession throughout the state sent me congratulatory letters, or letters hoping that the bill might pass, and many gave me valuable assistance in the preparation of the bill, and urged its passage; and nowhere else in the state did any opposition come from physicians, that I heard of. There were about forty, claiming to be members of the profession in Milwaukee, that made an organized effort to defeat that bill. I think if the people knew their danger, and knew the extent to which quackery is carried on in this state, they would demand such a law, in such a tone that no legislature could ignore their claims. In my opinion, the better way is to show them wherein their danger lies; that half

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or more of the physicians practicing in this country are unqualified. That is what they need to learn.

Dr. Davis: Allow me to say a word. Some three or four years since, I drew a bill having in view this reform, requiring registration at the county seat. I sent it to Senator Welch. I think it was his first term from Sauk County. There were two or three physicians then in the Senate, and he said that the opposition he encountered to that bill was from the men who pretended to be physicians. Whether it was a little feeling that they would like to father the bill, or not, I don't know. I suspect that one of them was not a legal practitioner — not authorized by any diploma. Now, in regard to getting the people to move in this matter, I have no confidence in it. Twenty years ago, when I had the honor of being a member of the Senate, I undertook to move in this matter, and I got but very little help from physicians, and almost no help from the people. I do not believe that the people of Wisconsin as a body will ever move in it. If we do anything, we had better agree as a body, see our members of Assembly and Senate, and ask their aid in this matter. We know it is for the good of the people; but the more humbug people generally have, the better they like it. That is my experience. If this state association can agree upon a plan to pursue, and be united, then we may accomplish something. But we are just as liable to encounter opposition from physicians who may get into the legislature as we are from anybody else. That is my experience. It is a good while since I was there, but I was there quite a number of years, and that was the condition of things then. Above all things we should be united, and then get intelligent men to help us.

Dr. Strong: One word more. If any person believes that a reasonably good law will not be efficient, I would refer him to the result of the Illinois law. I live upon the state line between Wisconsin and Illinois, and I refer to those gentlemen who live on the border if they did not notice an active migration of the profession over the line after the Illinois law had passed. Some came into my town, and I think it affected all towns in the same

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way lying on the border. How far north it extended I don't know.

Dr. Wight: I fully agree with Dr. Reynolds, that a law of this kind should be entitled, "For the protection of the people against quacks and pretenders who engage in medicine and surgery," and not for the protection of the profession. We should not go before the people asking to be protected from quacks. If we cannot take care of ourselves, we should go under. We should work in behalf of the people. We should have that aim in view in any law to protect them against all the evil consequences that we, as a profession, know follow from quackery. On another point I do not agree with Dr. Reynolds, and will state to him, although I took no part in it, that the opposition to the bill last winter, coming from Milwaukee, was based upon the fact that there was a clause in it allowing men to practice who had been in practice, whether physicians or not, a certain number of years. It is a bad law that will permit a man to commit crime in the future because he has been committing it any number of years. We have observed, all of us, the bad results which follow from the practice of irregular men assuming to be of the medical profession, and any law that will allow them to go on in that course is in my opinion decidedly objectionable. I had a little experience on the subject of legislation in this matter. I went as a lobbyist in 1869, with the determination to work a bill through expressing some of the features that have been recommended here. I worked for it day after day. It was modified in some points, to my disgust, but it passed, and was a law of the state until the next session of the legislature. Many a grey-headed sinner went off to take his second course of lectures under the influence of that law that year. It met with opposition from men who called themselves doctors, in the legislature. That opposition came from men who were irregular practitioners, and were not entitled to the appellation of doctor. The next winter the quacks flocked to Madison with any amount of money in their pockets, and they got the law repealed, and we have been without one ever since. In my

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judgment there should be another feature aimed at the profession, after the first year's examination. I agree fully with the recommendation of the President of our association on that point. We have in this country too many so-called medical colleges who assume all the rights, titles and franchises of regularly organized institutions of medicine. We never can place the profession on a sound basis until the examiners shall be appointed by the state, and shall be independent of medical colleges. The teachers in medical colleges should not be allowed to license their students to practice medicine, whether they have taken one, two, three or more courses. Men granting diplomas should be separated entirely; then there will be a new order of things in the medical colleges. Now they compete with each other by making the qualifications and enrollment fee cheap. The college that graduates on the easiest terms gets the most students. Many of them smell of the shop altogether too much. It has been said, and said truly, that the practice of medicine is the meanest of all trades and the noblest of all professions. Colleges send out men to practice medicine as a trade in too many instances. I do not embrace them all in that category. Until we can establish state boards of examination that are separate from the granting of diplomas, the profession will not be placed upon a right and sound basis. There are men in the profession who are not qualified to practice. A quack with a diploma is no better than a quack without a diploma. I have heard a doctor — and some who are present will remember it — standing up and describing a case of prostatitis in an old woman. It was asked by Juvenal, "*Quis Custodiet ipsos Custodes?*"—Who shall keep the keepers? We want to arrive at that problem in some way. You want some kind of a state board, erected and placed on an independent basis—independent in politics—composed of earnest professional men, who shall be keepers of the keepers, and to whom a question of this kind shall be ultimately submitted.

Dr. Strong: I do not wish to tire this Society. I want to say one thing further. I have been at times around the Wis-

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consin legislatures—the different legislatures—and for the first time in my life I received evidence last winter that was gratifying. In talking with some of the more intelligent members of the legislature I discovered that they had some respect for this Society. I think while Dr. Reynolds worked faithfully and earnestly for the passage of the bill, that the reason that it did not meet with the approval of the Assembly more particularly — of course, his influence in the Senate was such, that, out of personal regard to him, they would at his request pass the bill there,— the great objection, and the only one urged to me by members of the House, was that it was not adopted, or recommended, or insisted upon by this Society. And one of the most intelligent and active members of the House said to me, "You attend to this matter in your Association and present something here that is sensible and practicable, and I believe if you gentlemen will be unanimous there will be no trouble in getting the legislature to do as you desire." I think so now, and that is the reason why I ask in behalf of the people — not of the profession — the united action of this Association in this matter.

Dr. Van Dusen. I was not aware I was a member of that committee until I was notified of the fact by my friend Dr. Bartlett, or I would certainly have responded to the appointment; consequently I have nothing to say upon the subject.

Dr. Reynolds: In relation to what the doctor stated about the opposition, it may be true so far as he was concerned. It was charged that the law was too stringent, and that it prevented midwives from practicing. The Sentinel, as you will perhaps remember, in an article said it was the worst law in the world; that it was gotten up by a few members of the last Medical Association, who assumed to know all that there was in relation to medicine; and it went for myself particularly, as trying to distinguish myself by advocating this law for my own personal benefit. I have been a resident of this state for thirty-two years, and I would not give the snap of my fingers for such a law, except for the general good. As far as you and I are con-

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cerned it will make no difference, and there is a question whether it will suppress quackery. In a very great majority of cases people when they are drowning will grasp at straws, and when you or I say to people you cannot be cured, they will get the advice of somebody who will tell them that they can be.

In support of what Dr. Strong says. I live within six miles of the state line. After the Illinois law went into effect I think six physicians that were rejected down there came to our county. Another one, who was a cancer doctor, lives over the line but does all his practice in our county. He does not dare to practice in his own county. And for the benefit of the committee, or any one who proposes to get up a law — I have had my share of it — I will say fix a law like the Illinois law, as near as can be, for I believe it is the only law that we can get to pass. You will have to put in some clause that will allow those men who have practiced ten years to continue. Put in some such clause that they have practiced for ten continuous and consecutive years, and let a neighboring physician make oath that they have practiced legitimately, and it would be of great benefit, because I know, and many of you know, men who have practiced regularly — and there are some members of this Society—who never had a diploma, who never attended lectures. Those men are straight, and very fair physicians.

There are some nice old gentlemen who commenced practicing when I was a boy perhaps, or before I was born, that have practiced forty or fifty years. It was not so easy to graduate in those days. Men frequently went to Europe to graduate. Others, that could not do so, studied medicine in the office of a local physician, and had to go to New York or Philadelphia and spend thousands of dollars to graduate. The ten years' clause saves that class of men, which is all the good it does; besides, if you stop the manufactory of quacks, and keep them out of the state, they begin to dwindle, and after a while they are gone. The ten years' clause would prevent any more from practicing, and would allow those who are in practice to continue their practice. They will have the benefit of it, but this

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evil will be no worse than it is now, and eventually it will disappear. It is in the Illinois law, and it is in nearly all the laws. I would advise the committee to make the bill as liberal as possible. If you get it too stringent, men will resist. I shall not. You cannot get it too strict for me. I have copies of the Michigan bill, which is now pending before that legislature; the Indiana bill, which was passed and vetoed by Governor Williams; and our own bill, which I will submit to the committee when it is formed.

Dr. Van Dusen: I think my position is very well understood by a good many members of this Society. Some years ago, in an address that I made to this Society, as President, I defined my position, I think, very clearly, so I could not be misunderstood, and any one referring to that may know my views now. I have not changed. My whole life as a practitioner of medicine has been continually in opposition to quackery. I have never countenanced it in any of its parts or characteristics, and I have conceived it to be one of the worst blots upon our profession that we have not moved in this matter more faithfully, so as to keep ourselves, and the people we protect, from this terrible evil that has been prevailing for the last thirty years, during my practice in this state.

Dr. Wight: I wish to make one suggestion to this committee, whose duty it shall be to present a bill to the legislature, in regard to midwives. I have had something to do with them in my official position. The law makes it my duty to subscribe to every death occurring where a midwife has been employed. Whenever a certificate of death comes in from a midwife, I ask her for her credentials, and a number of them present diplomas given by regular authorities in Germany, and those are certified to. Those women who receive regular diplomas as midwives to practice, with certain qualified restrictions, are a most useful class of women to the poorer classes, who cannot pay the fees of a regular accoucher. But with those having no such qualifications, where a death occurs I will not certify to it, but have the

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coroner hold an inquest upon the body. Recently I have adopted the same practice in regard to quacks. I have made a public announcement that I will not take the death certificate of a quack. The courts reject the testimony of such persons, and will not allow them to testify as experts. Courts will not grant processes to such persons to collect bills, and I do not believe that I am required, under a provision of the same law, to take a death certificate from an irregular practitioner; and I shall continue to do so in the future, unless I am served with an injunction from some court.

Dr. Meachem, Jr.: I have had some correspondence with Dr. Bartlett in reference to this matter, and I infer from what I have heard here, that the President's report covers many of the points brought out in that correspondence. It seems to me, however, that whatever is incorporated in any law governing this matter should not be too stringent. It has already been stated that a too stringent law will not pass, and that I believe. There is no better source than the State Medical Society from which a law should emanate, and that law should be to protect the people. There is one matter that may have some bearing on this subject. Bellevue Hospital Medical College will not grant a degree to any graduate of three or more years' standing who cannot show a certificate of membership in some medical society entitled to representation in the American Medical Association. This means that a man must show his colors, whether he is a quack or not, before Bellevue will have anything to do with him. There is now an Association of Medical Colleges. Would it not be well for this State Medical Society to propose to that Association the adoption of something similar for every college represented in that Association? Would it not tend to prevent a certain drifting into quackery by men who are now or have been in good standing? And would it not add a little to the power that is gradually drawing a net around quackery? Besides this, it would have a certain influence on medical men to have a care for their State Society and to attend its meetings,

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and consequently add moral force to any law that may be passed.

Dr. E. W. Bartlett: Dr. Reynolds has spoken of the action of the Milwaukee physicians, and also of the Milwaukee Sentinel, in regard to his law. I desire to explain, that many of them signed it in order to get rid of a party who importuned them to sign the protest in business hours, and who did not know that Dr. Reynolds had offered any such bill. They signed it on the spur of the moment. It is my impression that if this Society will stand shoulder to shoulder and ask for a law which is reasonable, that we can get it; and if we do not get it the people will rise *en masse* and ask that we frame such a law as will protect them. In regard to asking that we may be protected, I think nothing is further from the ideas of any regular qualified practitioner than that.

The report of the Committee on Ethics, nominating the Committee on Medical Legislation, was here presented, as follows: Dr. N. Senn, Chairman, Milwaukee; Drs. H. P. Strong, Beloit; T. P. Russell, Oshkosh; J. K. Bartlett, Milwaukee; M. M. Davis, Baraboo. The report was adopted.

Secretary: A paper, by Dr. Hunt, on Placenta Prævia, has been approved by the committee to which it was referred. On motion it was referred to the Committee on Publication.

Dr. Wilber: I move the reconsideration of a paper which, on the recommendation of the Committee on Pathology, was referred to the Committee on Publication, and that it be referred to a special committee, consisting of members living at and near Madison, and who are presumably conversant with all the facts mentioned in that report. The committee to consist of Dr. Favill, as chairman, and Drs. Hobbins and Mack. The motion was adopted.

Dr. Van Dusen: I have a favor to ask of this Society. I will state that during the winter I was called to assist Dr. Vivian in a peculiar case of fracture. I had supposed that the doctor would be here — he promised me that he would — and relate in

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detail the facts of the case. When I found out he would not be here I attempted to write it out to the best of my knowledge. I only saw the case during the operation, and now I am unable to finish it. I ask the privilege of doing so, and sending it to the Committee for their consideration as to publication. Seconded and carried.

Secretary: There are two papers by Dr. Meacher, the one on The Administration of Chloroform,* the other entitled Six cases of Lithotomy. These papers are approved by the proper committee for reference to the Committee on Publication without reading. On motion the papers were so referred.

Secretary: That completes the papers, except one by Christian Linde, which has been recommended by the Committee to be read.

Dr. Whiting: I should be glad to hear Dr. Linde's paper, but we have considerable business to do yet, and if we are going out on the train we shall have to expedite matters. I move that it be referred to the Committee on Publication. Adopted.

Secretary: At the meeting of 1877 there was an amendment offered to the Constitution, which reads as follows:

Resolved, That no candidate for the study of medicine shall be received into the office of any member of this Society, as a student in medicine, until he shall have received the certificate of the President of the State University, or of some one of the Presidents of the Normal Schools of the State, that he is educationally qualified to enter upon such professional study.

This amendment was offered by Dr. Whiting, and last year it was laid over until this year. Dr. Whiting desires that it be continued, and for that purpose I move that it be laid upon the table for another year.

Dr. Whiting: I am glad to have it take that course, because there is no time for discussion; but I consider it a valuable question, and one that ought to be kept alive.

*This paper was retained by its author and has not been furnished for publication.

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Seconded and carried that the same be laid over until another year.

Secretary: I have a communication addressed to the President from Messrs. Cramer, Aikens & Cramer, as follows:

DR. NICHOLAS SENN, *Pres't Wisconsin State Medical Society:*

Dear Sir:—At the suggestion of our friend Dr. James Johnson, we most cordially invite your Society, in a body or individually, to visit our printing house at your leisure.

Very respectfully,

CRAMER, AIKENS & CRAMER.

I move that the thanks of the Society be returned to them for the invitation. Seconded and carried.

Secretary: During the past year five members of this Society have died, viz., Drs. Burroughs, Davis, Lueck, Sperry and Waterhouse. Dr. Rice has written me that he will prepare an obituary sketch of Dr. Sperry; and I understand that Dr. Jenkins will prepare one of Dr. Burroughs. I move that obituary sketches of each of the deceased be requested from members of the Society who knew them, and that such sketches be printed in the next Transactions. Adopted.

Dr. E. W. Bartlett: A motion was made last year that Dr. Van Dusen be requested to prepare sketches of the pioneer men of this state for publication.

Dr. Van Dusen: In relation to that matter, previous to leaving the city I had written to a large number of members of this Society in each portion of the state to aid me in this work. I could not without such aid prepare such sketches. I supposed that I should certainly receive at least one response, but I am sorry to say I did not receive one. So, consequently, I have been unable so carry out that idea. It would afford me great pleasure to do so if I could get the desired data upon which to base a report.

Dr. Wilber: I would ask that the doctor be relieved from that duty.

Dr. Van Dusen: I would ask to have it continued, provided

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I can get help. I can have no correct history of the old members of this State Society unless I can have it from the persons that can give me the information.

Dr. J. G. Meachem, Sr.: I move that it be continued. Seconded and carried.

Dr. Strong: For certain reasons the action of the Association at its last meeting delegated the authority to the President and Secretary of the Society to appoint delegates to the American Medical Association. Whether the method is practicable or best I cannot decide myself, but I bring the matter up for consideration, as I understand that none have been appointed this year.

President: No, sir.

Dr. Strong: Will not that method be more likely to secure the attendance of representative men with a purpose than the uniform manner of delegating? If so, to test it, I move that the President and Secretary be authorized to execute credentials to the delegates that this Society is entitled to, to the American Medical Association for the coming year, and to State Societies also. Seconded and carried.

President: Gentlemen—I think the table is now clear, and in retiring from the position of honor to which you elected me so unanimously one year ago, I sincerely thank you for the uniform courtesy and kindness that has characterized your actions during the entire session. In vacating the chair I wish the society to enjoy prosperity, and hope that every member will continue to do his utmost to make it what it ought to be—an institution to raise the standard and increase the power and usefulness of our noble profession. [Applause.] The last and most pleasing duty will be to present to you your president-elect. I will appoint Dr. Whiting and Dr. Van Dusen to conduct him to the chair.

Dr. Meachem, Sr., was then conducted to the chair, when Dr. Senn said: Gentlemen, it gives me great pleasure to introduce you to your president-elect, Dr. J. G. Meachem, Sr., of Racine. [Applause.]

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Dr. Meachem, Sr.: Gentlemen of the Society—I fully appreciate the great honor you have conferred upon me by electing me President of this Association. I will do all in my power to carry out farther the interests of the Association in every possible way; and I can only assure you that if I follow the example that has been set me by the worthy President who retires, I know I will meet with your approval. [Applause.]

Upon motion of Dr. Meachem, Jr., a vote of thanks was extended to Dr. Senn for the very dignified and honorable way in which he had conducted the business of this Association.

Dr. Van Dusen: I move that the thanks of this Society be extended to the Secretary for the able manner in which he has conducted his duties through the past year. Seconded and carried.

Dr. Meachem, of Milwaukee: I move that a vote of thanks be given to Judge Mann and the Supervisors of the county for their kindness in allowing us the use of the court room. Seconded and carried.

Dr. Whiting: I move that our thanks be extended to the railways who granted us the benefit of a reduction in fares, and to the hotels also, for their courtesy in this matter. Seconded and carried.

Secretary: We have not yet fixed upon any place for the next meeting of the Society.

Dr. Strong: I move that the Society meet in Milwaukee.

Dr. Meachem, Jr.: I second it.

Dr. Whiting: I want to name Madison as the place of meeting.

Dr. Wilber: I second it.

Dr. Whiting: I am well treated by the Milwaukee people, but Madison is the state capital, and I think it is the place for us to meet. While I know it won't meet with the approval of the people on the lake shore line, yet it saves a good deal of travel to those living in the western part of the state.

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Dr. Wilber: Dr. Whiting has expressed my opinion. In the early days of the Society we met at Madison. The old associations of the Society are connected with Madison, and there are various reasons why it would be well occasionally to meet there. We come from the western portion of the state to Milwaukee, and we are treated fairly and satisfactorily here, and like to come. Still, we like to go to Madison. It may be some concession for the gentlemen in the eastern part of the state to come as far west even as Madison, and, therefore, I prefer Madison as the next place of meeting.

Dr. Strong: I have had occasion to announce my sentiments upon this question heretofore. I give every gentleman the credit of being as unselfish as I am. Madison to me is more convenient than Milwaukee. I think, however, that if you will take the history of the meetings of this Society, you will find that the attendance in the increase of members at Milwaukee have exceeded those at Madison considerably. That indicates, to my mind, it is more central to the majority of the members in the state. When I have spoken heretofore on this subject it has generally been upon the broad principle of being opposed to traveling. I am opposed to it. If you are going to adopt a permanent place of meeting, we know where we shall meet, and I think the Society will be more efficient and more steady-going in its character. It seems to me that this is more central to the majority of the members than any other place in the state.

Secretary: Unquestionably Milwaukee is the most convenient place for a great majority of the members to come to. There is one objection, however, that it involves a great amount of labor upon the physicians in Milwaukee, and, I fear, a good deal of expense to them; for that reason I should prefer that we should not always meet in the same place.

Dr. Van Dusen: I have no particular feeling about where we meet. My hearing has become rather imperfect; so much so that I hear but very little that is said. But it does me good to meet the old members of the Society — and the new ones

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too—that I have been acquainted with and have met for over thirty years. I don't care where it is held, even if at Green Bay, as long as I am able to meet the members of this Society and see my old friends. Wherever it may be I am perfectly satisfied. [Applause.]

The question was then voted upon by the Society, and the President announced that Milwaukee having received the largest vote would be the next place of meeting.

Dr. Meachem, Jr.: I move that a vote of thanks be extended to the physicians of Milwaukee for the handsome way in which they have entertained this Association. Seconded.

Dr. Strong: I wish to add to that, that we do not desire nor expect the physicians in Milwaukee to expend any money hereafter as they have done.

Dr. E. W. Bartlett: I certainly hope that this addition that Dr. Strong has suggested, will not be made. If I ask any of you gentlemen to come to my house, and you come, and then go away saying that you hope that hereafter I will not invite you to my house again, how should I look at that? You have not asked us to do anything. We work for that which we like. We work for the Society because we take a pride in it. It has given me a great deal of pleasure to see you gentlemen come here and enjoy yourselves. When I am away from home I like to enjoy myself, and always try to do so. And we physicians of Milwaukee are most happy in doing what we have done, and therefore, as far as this addition is concerned, it ought not to have been made. If the gentlemen of Milwaukee, or any other place, like to show a little courtesy to the Society, and help those members away from home to enjoy themselves, I trust the Society will feel like accepting it.

Dr. Strong: Now these Milwaukee gentlemen are a pretty nice lot of fellows, and I hope they do not suppose that I fail to appreciate the courtesy which they have extended to the physicians of the state. If Milwaukee is to be the place of meeting mostly, it seems to be a tax upon them that is unneces-

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sary. I wish this Society to express to them that it does not require being banqueted whenever we happen to come here; and if they will slop over why we cannot help it, and we will try to use them well.

Dr. Van Dusen: I think the physicians of Milwaukee should be their own judges in this matter.

Dr. Whiting: I think so too. I rather enjoy it. [Laughter.]

Dr. J. K. Bartlett: There is one consideration that has perhaps not been touched upon at all, and that is we have hardly time for our meetings. We have to rush things through as it is, and whilst the banquet is a very good thing, I think it ought to be dispensed with, as it does not allow us time for the proper discussion of papers, and whilst I enjoy the banquet as I stated, still I think the improvement of the Society should be our aim, and for that purpose we should spend all our time attending upon it.

A vote was then had upon the amendment of Dr. Strong, which was lost, and the motion as made by Dr. J. G. Meachem, Jr., was carried.

Dr. Wilber: In connection with the suggestion of Dr. Bartlett, I wish to refer to a matter that has been called to the attention of the Society previously, and that is this: that we have very little time to accomplish the business of the Society on the regular committee, there being as many papers as there are members of the committee. Now if that should be corrected so that the chairmen of the committees should have the making of the papers, and if the minority of the committee see fit to put in any matter which is not in the report of the chairman, it seems to me the business of the Society would be greatly expedited. With this view, a year or two ago, I proposed an amendment to the constitution that those committees be single; that every standing committee be composed of one member, and that he be permitted to call to his assistance—should he be unable to perform the duties—some other gentlemen for the completion of the duty of that committee. I still think that

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would be desirable for this Society; still, I do not feel like pressing it now.

President: The members are so far distant that I do not think it would be practicable, and until we have such an amendment we must comply with the rules.

Dr. Whiting: Some years ago, when I had the honor of being the chairman of one of the standing committees, I supposed it was the business of the chairman to incorporate all the reports. I wrote to my associates asking them to send me their papers, so that they might be incorporated, and that I might have some guide for myself; but I found it would not weigh with the others, and they kept their own course. I think it would work delay. There is an objection to the way we have of presenting papers. Although we have a resolution that no paper shall take over twenty minutes in its reading, yet many, if not all, occupy forty minutes or longer, and we thus get into confusion. Now it seems to me that the gentlemen who are honored by the Society to present papers ought to remember to cut down their papers to the limit which the Society in its official capacity votes shall be given to them, and I hope next year that the hammer will fall at the end of twenty minutes unless that rule is abrogated. I hope it will go down at the end of twenty minutes, and that will be the end of it, unless some member moves that it be completed. I hope we shall adhere to that rigidly, and have some sort of system. If I come here and say my paper will take sixty minutes, and I read it, the other members' papers are cut off perhaps from being read. Let the hammer go down when the twenty minutes expires, and if the Society is interested enough in the paper, time will be given for the completion of the paper, upon the proper vote being taken.

President: I think it has been rigidly observed at this meeting, and the twenty minutes have not been exceeded except by vote of the Society.

Dr. Reynolds: I would suggest, after watching the course

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of things for several years, whether it would not be better to take more time for discussions than has been devoted to them. As Dr. Whiting says, towards the last we get mixed up, and we have to rush things through, and get papers referred without reading. Every man knows, when treating on a scientific subject, that twenty minutes is a very short time to make things clearly understood, or to get at the merits of the case, and therefore the papers must necessarily be over twenty minutes in length. And perhaps the interests of the Society would be better subserved if we should spend three days here instead of two. I can hardly afford to spend two days, but if we can, let us spend another day. It seems to me that would be a better way for the improvement of the Society in general, than to make the rule more rigid, and the time shorter.

Dr. Whiting: I want to make a motion; I think it is not in the organic law, but it may be done by simple motion, and that is, that the Secretary be instructed to have put in a more conspicuous place these words: "That this Society does not hold itself responsible for the views presented in any of its papers."

The President then announced the following committees for next year.

Surgery—Drs. T. P. Russell, Solon Marks and Wm. Meacher.
Practice—Drs. E. H. G. Meachem, B. O. Reynolds and Jas. Dorland.
Obstetrics and Gynæcology—Drs. J. B. Whiting, G. F. Hunt and G. Seiler.
Pathology—Drs. M. M. Davis, L. G. Armstrong and Geo. M. Steele.
New Remedies—Drs. Wm. Fox, J. F. Hopkins and Geo. W. Jenkins.
New Medical Literature—Drs. E. L. Griffin, F. Linde and W. F. Whyte.
Ophthalmology—Drs. E. W. Bartlett, B. C. Brett and Chas. Ottilie.
Finance—Drs. H. L. Butterfield, A. Grættinger and Henry Palmer.
Arrangements—Drs. Wm. Thorndyke, Nicholas Senn and D. Mason.
Ethics, for three years—Drs. H. P. Strong, P. Fox and G. F. Hunt.

The nominations of the President for the Committee on Ethics having been confirmed by vote of the Society, upon motion of Dr. E. W. Bartlett the Society adjourned.

J. T. REEVE, M. D.,
Secretary.

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ARTICLE II.

MEDICAL LEGISLATION.

The Annual Address before the Wisconsin State Medical Society.

BY NICHOLAS SENN, M. D., PRESIDENT,

OF MILWAUKEE.

Medical legislation has always been a perplexing subject to the state and the medical profession. Laws regulating the practice of medicine have been established by almost every well-organized government from an early date to the present time. Changes in the form and requirements of such laws became necessary from time to time to adapt them to the existing condition of medical science, and the facilities for obtaining a knowledge of the same. Restriction and regulation in the practice of medicine have been exercised by autocratic and democratic forms of government; they can, therefore, not be considered as infringements upon the liberties of the people, but must be regarded as a part of general legislation, the latter having for its object the protection of life and property, and the preservation of health. The little republic of Switzerland, with its model form of government, probably exacts higher attainments from its practicing physicians than any other country in the world.

The object of medical legislation should be to protect the educated physician, to sustain the honor of the profession, and to guard the people against the impositions of ignorant pretenders. As this subject is now attracting well-merited attention in this and other states, I have deemed it appropriate to call your attention, on this occasion, to the history of medical legislation, at the same time alluding occasionally to the educational advantages and social standing of medical men at different times.

The organization of the medical profession is the gradual growth of the wants or necessities in the various localities, without any preconcerted or consistent plan. As a rule, the highest standard of medical education, and the most stringent restrictions in the practice of medicine, have at all times existed among nations of the highest degree of civilization, and endowed with the most perfect form of government.

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During the infancy of nations medicine constituted a part of religion, and its practice a religious act. Medicine and religion are closely allied, outgrowths from the same noble desire to benefit mankind. The early priest, animated by a sense of duty and love, aside from his sacred duties ministered to those of his charge who suffered from accident or disease. Medicine became a science and a distinct profession as soon as civilization had advanced sufficiently that man was led to inquire into the mysterious structure of his own body, and into the nature of disease,—investigations which gradually developed a rational course of treatment. The office of physician appears to have become distinct and separate at an early day.

Sirach alludes to the physician as follows: "Honor to the physician! His knowledge allows him to walk with the head erect, and entitles him to the respect of princes. If you feel sick, pray to God and send for the physician; a wise man does not despise the remedies of the earth."

Among the Hebrews, the Levites acted as priests and physicians. In Egypt, the physicians were all specialists, each one devoting his whole time and attention to the diseases of some particular part or organ of the body. They were classified according to their degree of learning, and received about one-third the nation's income. In India, the Brahmin, or priest, acted also as physician. From early childhood he received a careful theoretical and practical training. Many admirable qualities were required of him: He must be well built, impassionate, sober, affable, true, diligent, earnest, modest, virtuous, and not despise even the doctrines of his enemies. He must be cleanly in his habits, his fingernails must be cut short, and his clothes perfumed. How many of these excellent and desirable qualities can be justly attributed to the physician of the present time? In Persia, the physician had to submit to a practical test before he was permitted to practice. He was required to operate upon three unbelievers; if they all died he was rejected; if they all recovered he entered the ranks of the regular profession, and was allowed "to cut the believers as he may think proper; he may cure by cutting as he may deem necessary." Among the aborigines of this country, the Tla-qill-augh constituted the spiritual and medical advisor. His duties were laborious and manifold. He was not only consulted as priest and physician, but his advice was sought on subjects of the most diverse nature. He commanded the respect of his people, and occupied a prominent position in public and private affairs.

In China and Japan the medical profession has always been overcrowded, from the fact that with the exception of the court physicians, no examination has ever been required to admit them to the practice of medicine. They obtained their limited knowledge by reading their

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books, which are quite numerous. In Turkey the same freedom exists to the present day; only the military surgeons are as a rule well qualified, being required to study ten years, four of which are spent in acquiring a preliminary education, and six years in the medical college.

Greece, for a long time the cradle of art and science, and the home of distinguished philosophers, was the first country where ignorance and superstition yielded to rational medicine, based upon scientific principles. A thorough preliminary education in reading, writing, computations, geometry, astronomy, and music was required as a prerequisite to the study of medicine. The temples of Æsculapius, called the Asclepions, were the great centres of medical knowledge. They served not only as places for instruction, but as habitations for the sick, and may be regarded as the earliest attempts in the establishment of regular hospitals. The physicians in attendance, called asclepiadæ, instituted a systematic course of medical instruction, embracing three distinct grades. After having undergone a process of purification before admission, consisting in an elementary training in arithmetic, geometry, stereometry, music, and astronomy, the student was admitted to the first grade, called *illumination*, or the study of theorems, logical, political and philosophical; in other words, the study of abstract principles. The next grade was called *inspection*, and had reference to practical training—the study of disease at the bedside. The last stage, termed *coronation*, was equivalent to our graduation. The candidate, after a solemn ceremony, was invested with a crown or wreath, and received authority to practice his profession, and impart his knowledge to others. To pass through these degrees required not less than five years. During the time of Hippocrates, some localities required a certificate of proficiency from some noted practitioner, to enable the applicant to practice medicine, but in most places no such restriction existed. As a natural consequence, the country became infested by innumerable quacks, "against whom the regular physician had no redress, except a superior education, earnestness of purpose, a devotion to his duties, and the confidence of a discerning public." The excessive competition, the envy, and, most of all, the dishonest practice of the charlatans, so lowered the medical profession in the estimation of the laymen, that by many the practice of medicine was considered a dishonest, disreputable trade. With the exception of a few eminent men, the physicians were not honored, but despised by the people. Hippocrates attributed this loss of confidence to its proper source. He says: "The never-ceasing strife among medical men brings the healing art in discredit among laymen to such an extent that they no longer believe in the existence of this art. In the treatment of acute diseases the practice

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among physicians is so varied, that what one adopts as a remedial agent is condemned as dangerous by another."

Sad as this picture may appear, it only reflects to a great extent the condition of things as they exist among us to-day. The same dishonest rivalry, the same satanic jealousy, the same shameful attempt to stain the reputation of a fellow practitioner, are manifested only too often at the present time; perhaps not so openly and directly, but by sly hints and insinuations that can leave no doubt as to their intentions. It is not surprising, then, that we are often estimated and judged by the people in about the same ungracious manner as our predecessors more than two thousand years ago. The blame rests not so much upon the people as upon the profession itself. To remedy this evil, and gain the confidence of the public, we must elevate ourselves and seek to expel from our ranks the element that has during all times dragged the profession into disgrace—the quacks. To these Hippocrates fittingly alludes: "Medicine is of all the arts the most noble; but, owing to the ignorance of those who practice it, and of those who inconsiderately form a judgment of these, it is at present far behind all other arts." "Their mistake appears to me to arise principally from this: that in the cities there is no punishment connected with the practice of medicine, except disgrace, and that does not hurt those who are familiar with it. Such persons are like the figures which are introduced in tragedies; for, as they have the shape, and dress, and personal appearance of actors, so also physicians are many in title, but few in reality."

During the time of Aristotle, the medical profession was divided into three classes: 1. Apothecaries, whose exclusive business consisted in preparing and dispensing medicines. 2. Physicians engaged in general practice. 3. The medical philosophers, who pursued the study of medicine as a liberal science only, without relying upon the practice of medicine as an industrial occupation.

When Greece became involved in a succession of bloody wars with its northern neighbors, it no longer remained the centre of education in the world—a position it had occupied for centuries. The tender plant of art and science which had prospered in its fertile soil, withered from want of care, and was conveyed to Alexandria, where it received the most careful attention on part of the government. The first teachers in the Alexandria school were obtained from Greece. The system of instruction was divided among the four faculties of literature, mathematics, astronomy, and medicine; to these special departments were added. For the purpose of stimulating study and of increasing the reputation of the school, prizes were awarded to the students that distinguished themselves. On one occasion, as a prize was about to be awarded for the best compo-

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sition, Aristophanes, the grammarian, pointed to the very volume in the library from which it was copied verbatim. This illustrates how prizes are sometimes obtained. During the early history of the Alexandrian school, dissections were practiced, but were again abandoned on account of an uncontrollable prejudice and superstition among the people; and thus the study of medicine was reduced to a mere department of speculative knowledge.

During the early history of Rome, the medical profession of that city was in a deplorable condition. Physicians occupied such an inferior position in society, that it was considered beneath the dignity of a Roman citizen to become a physician. The sick were attended by slaves. The first physicians of ability came from Greece, and soon established themselves in the confidence of the people. Among the first who became prominent was Archagatus, who was made a citizen of Rome, and was held in high estimation. His career in Rome illustrates well the transient character of public opinion. After he had performed several operations, the results of which did not satisfy the expectations of the people, he was called *carnifex*, and he, with many of his native colleagues, had to leave the country for their personal safety. This new outbreak of animosity towards the physicians was excited by the dishonest practice of quacks, by men who had come to Rome for the purpose of practicing medicine without being qualified, the only object being to acquire wealth. In many instances the people were not only maltreated, but robbed, by these pretenders. This was carried to such an extent that Galen was induced to say, "There is no difference between robbers and physicians, except that the former live in the mountains and the latter in Rome." That the people then were as incompetent to distinguish between the physician and quack as they are now, is evident from what Galen says further: "The public does not call into requisition the best physicians, but those who flatter their whims. Where nobody takes into consideration qualification, in the choice of a physician, but the skillful and ignorant are estimated alike, then each one of them will have in view what yields income with the least exertion."

Medicine again became appreciated by the Romans through the influence of their philosophers, orators and statesmen. The study of philosophy was so intimately associated with that of medicine, that these persons became familiar with it during their pupilage. They learned to appreciate the value of medicine and respect it as an art. Cicero alludes to the profession as follows: "*Licet enim omnibus, licet enim mihi, dignitatem medicinæ artis tueri.*

Cæsar, for the purpose of encouraging the emigration of educated physicians to Rome, decreed that all who practiced physics in the city

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should enjoy the privilege of citizenship. Several of the later emperors conferred important privileges upon the physicians of Rome. Asclepiades, Cicero's intimate friend, instituted a new departure in the practice of medicine which restored public confidence and increased the sphere of usefulness of the healing art. He observed that the principal source of mistrust towards his predecessors arose from their crude and unfeeling practice; accordingly he rejected most internal remedies as liable to offend the stomach, and confined himself mainly to hygienic and dietetic measures.

The medical schools at this time appear to have been private institutions, hence the great rivalry that existed between them. In Athens this spirit of emulation became most apparent among the different schools and their teachers. Among the students the same tendency prevailed. Each student attached himself to his teacher, and made it an object to canvass in his interest. The indigent class of students more especially bent themselves to this low business of recruiting, since, by so doing, they were exempted from class payment, and even received remuneration for their services if they were successful in securing a good supply of new comers.

Although more than fourteen centuries have passed away, surrounded as we are by the graceful influence of Christian charity and the refinement of modern civilization, we observe the same selfish struggle for patronage among the rival educational institutions of the present time. It is not always the best schools that attract the largest number of students, but those that advertise most extensively, that possess money and influence, and that grant the degree after the least amount of exertion, and in the shortest space of time.

The first hospitals were established during the reign of Emperor Constantine. The Asclepions, and other places of pagan worship, were transformed into hospitals and other charitable institutions under the auspices of the Christian church. The Emperor and his mother Helena took an active part in this noble work. In the year 373 Basil erected an immense hospital at Cæsarea called Basilides, which was at that time considered as one of the wonders of the world. Many royal persons in those days acted as nurses, and contributed liberally towards assisting the poor and alleviating the suffering of the sick.

Prior to the consolidation of the empire there existed no laws regulatingthe practice of medicine. The time spent in studying medicine was not less than five years, as may be inferred from Galen and other writers. At this time most of the medical schools in Rome were under the control of the government; the professors received a stated salary and had the privilege to retire on a pension after twenty years' active service. In the densely

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populated parts of Greece and the Roman Empire, it became necessary to appoint a certain number of physicians who were paid a fixed salary for their public services. By a decree of Antoninus Pius the number of these state physicians was limited, in the metropolitan cities to ten, in cities of the second class to seven, and in the smaller cities to five. In Rome one was appointed for every ward. Their duties consisted in attending the poor gratuitously and superintending the educational work in the state. They were held in high esteem and were exempt from many public obligations. They usually served as teachers in the colleges, and examined all applicants for admission into the ranks of the profession in localities where the law made provision for such restriction.

During the early part of the Christian era the clergy again assumed the duties of the physician. Some distinguished themselves as medical writers, prominent among them, Nemesius, bishop of Emesa. During that dark period in history, usually denominated the "Dark Ages," the progress of medical science was arrested. No material advancement was made until Italy became the seat of learning. Dissection of the human body was here permitted for the first time on a large scale, and thus the essential condition furnished which was necessary to advance medical science, and elevate the medical profession above the level of the empirics. A new and bright day began to dawn for science and the profession. The people began not only to appreciate the value of a thorough medical education, but commenced to institute measures to suppress quackery. Roger, King of Sicily, in 1140, decreed a law which compelled every person to pass an examination before he was permitted to practice medicine. A failure to comply with this regulation, subjected the offender to imprisonment and confiscation of his property. Emperor Frederic II. required compliance with the following law regulating the practice of medicine:

1. Any person is entitled to practice in the various departments of medicine, and assume the title of doctor, who has passed a satisfactory examination before the medical faculty at Salerno, and has received permission from the Emperor or his representative. Any person practicing without having complied with these requirements is subject to fine, and imprisonment for one year.

2. Before the candidate is admitted to the examination, he must produce evidence that he has studied logic three years, medicine and surgery five years, and must have practiced one year under the supervision of an experienced physician.

3. The candidate is examined in the therapeutics of Galen, the aphorisms of Hippocrates, and the first book of Avicenna. After having passed a satisfactory examination, he must take oath to be pure in life,

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to submit to the laws, to attend the poor gratuitously, and not to share the profits of the apothecary.

Surgeons were divided into two classes. Surgeons of the first class were required to pass an examination before three professors, conducted in the Latin language, in the presence of the magistrates of the university. The diploma was signed by the three professors and the officers of the university, and had attached a notarial seal. Surgeons of the second class passed their examination before two professors, and received a certificate signed by the examiners. This examination was conducted in their native language. Before surgeons were admitted to the final examination, they had to show that they had attended the lectures of their professors, and had studied the subjects pertaining to their specialty, especially human anatomy, for at least one year. They were prohibited by oath from prescribing for internal diseases. Considering the imperfect form of government then existing, and the incompleteness of educational advantages, the above requirements may be regarded as stringent. This law was efficacious in removing quackery and elevating the standard of medical education, as well as the social position of medical men.

The characteristic feature of medical instruction at that time consisted in inculcating a knowledge of ancient authorities, with occasional remarks and explanations on the part of the teacher. The duty of the scholar was to take copious notes and commit them to memory. Latin was the language among educated men, and became the language in the universities.

In the year 1588, the university in Frankfurt-on-the-Oder received unlimited control to regulate the practice of medicine in the city and in its vicinity. The faculty passed an act by which no person was allowed to perform the function of a physican unless he had been promoted to the degree of a Baccalaureus. This degree preceded the degree of Doctor in Medicine. If the baccalaureate degree had been obtained in another university, the applicant was required to pay to the faculty eight gold-pieces, whereupon he received a license to practice.

The medical departments of the universities in Frankfurt and Kœnigsberg were each conducted originally by two professors, one giving theoretical and the other practical instruction. In 1683 the substance of the law regulating the practice of medicine in Kœnigsberg read as follows: No person shall practice medicine unless he has received the degree *Medicinæ Doctoris* in the manner prescribed by law. In smaller cities no such high degree of proficiency shall be required, but all who intend to practice medicine must pass a satisfactory examination before the faculty, and obtain a certificate to that effect. As the power to grant licenses rested solely with the faculties of the universities, they not unfrequently conferred them

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upon persons not properly qualified, but for the sake of pecuniary considerations. Repeated endeavors on part of the government, as well as public opinion, proved utterly futile in arresting this abuse. This compelled the government of Prussia in 1725, under the reign of Friedrich Wilhelm I., to appoint state boards of examiners, whose duty it was to examine and license all candidates. Such a board of medical examiners was appointed for each province, and consisted of two physicians, two surgeons, and two apothecaries. These boards had to examine and license all surgeons, apothecaries, and midwives. In small places, where no physician resided, the surgeons and apothecaries were allowed to prescribe simple remedies, but were not permitted to resort to active drugs, as purgatives, emetics, emmenagogues, narcotics and mercury. Physicians who had graduated at any of the universities in the kingdom had to pass another and more rigid examination before the central board in Berlin, which, if the examination was satisfactory, issued a license to practice. This new regulation exerted a potent influence in elevating the standard of medical education throughout the entire kingdom. In 1868, the German government, for reasons difficult to explain, again vested the universities with the power to confer licenses. Two examinations are now required, both conducted by members of the same faculty; the first, if successful, entitles the candidate to practice; the second, if satisfactory, secures for him the degree *Medicinæ Doctoris*. That this new system is not operating satisfactorily is evident from a general expression of dissatisfaction, and Germany before long will again be forced to resort to the old plan of establishing independent boards of medical examiners.

Years ago, the study of medicine consisted of a routine memorizing of the teachings of ancient authors. It was a mechanical process, devoid of an independent process of reasoning and thinking on the part of student or teacher. To-day, "Medicine is a science which has man, as a compound of matter and mind, for its subject; and an infinitude of substances derived from the animal, vegetable and mineral kingdom, for its instruments." The study of medicine has become more comprehensive from year to year, necessitating a division of labor. Instead of two, as was formerly the case, every well organized medical college has now at least ten professors. The enlarged scope of study has correspondingly increased the labor on the part of the student. Many not essential branches have been erased from the curriculum. Philosophy has been gradually abandoned, and natural history reduced to a minimum; less stress is placed upon a classical education. Theoretical instruction has yielded to practical demonstration. Shorn of all non-essential branches, the objects for study are so numerous and varied that it is impossible for the student to obtain a thorough knowledge of them all. All that can be

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required is a knowledge of the general principles. Even the final examination by which the student's fitness to enter the ranks of the profession is measured, must be limited to the most important and practical questions. The student can only lay the foundation,—the physician must erect the structure of medical knowledge, by unwearied study and close observation. A vast amount of knowledge is not always a prerequisite to success. The physician must have energy and tact. A brain burdened with a weight of information on diverse subjects, can in many cases not apply itself to the practical task. Modern medical education consists in acquiring a knowledge of the structure and function of the human body in health and disease, and applying this knowledge at the bedside. The teacher and student are no longer the worshippers of ancient authors, but are constantly pursuing new thoughts, theories and experiments leading into the still unknown regions of our art. The spirit of the age—investigation and discovery—is manifested in no department of science more conspicuously than in medicine. Philosophy and theory must succumb to facts—facts ascertained by repeated observations and demonstrations.

Regular clinical instruction was inaugurated in Venice in 1517. The city government ordered that two physicians should visit the hospital at an appointed hour, and should give to the students practical instruction at the bedside. The same plan was adopted at Padua. This new field of study proved so attractive to the students that in 1796 the professors made complaint to the authorities that the students neglected to attend their lectures; whereupon clinical instruction was transferred to the regular professors. The catalogue of the University of Kœnigsberg announced a course of clinical instruction in 1790. Since that time the European schools have made this the most prominent feature of medical instruction. The large hospitals of the metropolitan cities furnish inexhaustible material for clinical instruction and the pursuit of practical anatomy.

In England the medical profession is divided into three classes, more or less distinct: the physicians, surgeons and apothecaries. The physicians practice medicine exclusively, or in connection with obstetrics; the surgeons, strictly so-called, are confined to operations and the treatment of surgical affections; the apothecaries combine the occupation of pharmacist, physician, obstetrician, and often the surgeon, under the name of general practitioners. Only those are entitled to the name of physicians who have graduated in a British or foreign university, or have become licentiates of the Royal College of Physicians of London. The charter of the College of Physicians of London provides that that body can prevent any one, who has not submitted to its examinations and received its license, from practicing medicine as a physician in London,

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or within seven miles of that city, and may even enforce its privileges by fine and imprisonment against any person who fails to comply with its regulations. In England and Wales, beyond the limits just mentioned, the only legalized physicians are the licentiates and extra-licentiates of the College of Physicians, and the licentiates of the universities of Oxford, Cambridge, and London. Extra-licentiates are those who are permitted to practice only beyond the limits of London and its vicinity. They undergo a different and probably less strict examination, and are required to pay less than one-half the diploma-fee demanded of the licentiates. Although practice may in a legal sense be thus limited, nevertheless, the graduates of Scotch and foreign universities have for a long time been admitted as licentiates by the college; graduation is in reality sufficient authority to practice. The surgeons proper do not seek a diploma in medicine, and have no special designation to distinguish them from other members of the community. To the eminent surgeon it is obnoxious to be called "doctor." No one can practice surgery, or assume the title of surgeon, who is not legally entitled to it. Such authority is generally obtained from the Royal College of Surgeons of London, whose certificate of membership, given after a certain specified course of instruction and a successful examination by the college, is everywhere received as sufficient guarantee to practice. The apothecaries or general practitioners have to serve an apprenticeship of five years; they must have attended three courses of lectures during the winter sessions, and two during summer sessions in some recognized shool, and must have attended clinics for a year in some hospital containing one hundred or more beds, before they are permitted to examination before the London Society of Apothecaries, who grant all licenses to this class. They do a general business, similar to that of the country physicians in the United States. It seems to me that the time has come when this distinction between members of the same profession ought to be abandoned as a relic of the past, and all who minister to the sick and suffering should be united in one great body, measured by the same standard, governed by the same rules, and enjoying the same rights. This done, the interests of the profession, the advancement of science, and the welfare of the public will be promoted.

In the infancy of our own country the medical profession was modeled after that in England. The early physicians came from Europe, and more particularly from England and Holland, and brought with them the habits and customs of their respective countries. They were generally well educated, able men, who not only commanded the respect of the people, but were often entrusted with responsible political positions. The early settlers were so intently occupied with clearing away the

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forest, establishing industries, and developing the commercial interests of this new country, that medical education was neglected. The limited number of well educated medical men made it necessary for others to supply the demand for medical assistance. Many of the missionaries sent here from Europe, received a limited medical education, and served in the capacity of minister and physician in sparsely settled districts. At the time of the Declaration of Independence about three millions of people lived in the thirteen states, and they were attended by three or four thousand practitioners, of whom not more than four hundred had received a regular medical education.

During the colonial existence of our country it was customary for students to become apprenticed for a term of three to six years to a practitioner, whose duty it was to give detailed and regular instruction in all departments of medicine. The student in return had to do a part of the work in the office; prepare medicines, cup, bleed, extract teeth, assist in operations, and, during the latter part of his apprenticeship, attend patients under the supervision of his teacher. Many of these students became successful practitioners without having entered a medical college; few attended more than one course of lectures. The object of college instruction was not to supersede but to supplement the work of the preceptor.

The early American student, if he went abroad for the purpose of acquiring a more complete medical education, attended in preference at Leyden or Edinburgh, Boerhave being in the former, and Cullen in the latter city, the great centre of attraction.

That the colonies became infested with quacks at an early date is evident from the language of Smith, in his History of New York: "Few physicians among us are eminent for their skill; quacks abound like locusts in Egypt, and too many have recommended themselves to a full and profitable practice and subsistence. This is the less to be wondered at, as the profession is under no kind of regulation. Loud as the call is, to our shame be it remembered, we have no law to protect the King's subjects from the malpractice of pretenders. Any man, at his pleasure, sets up for physician, apothecary or surgeon. No candidates are either examined or licensed, or even sworn to fair practice."

The first medical college in this country was organized in 1765, by Drs. Shippen and Morgan, and was made the medical department of the University of Philadelphia. This institution, after having undergone many changes in its plan of organization, has continued to exist to the present time, and is now known as the Medical Department of the University of Pennsylvania. Previous to 1810, seven colleges had been established, and during that year had an attendance of 650 students, while

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the population of the states numbered 7,239,881. From the year 1875 to 1876, there were 64 medical colleges in active operation, with 6,650 students, and an entire population in the states of nearly 40,000,000.

The early teachers were usually graduates from European schools. The plan of instruction, and the requirements for admission and graduation, were modeled after those schools, only that the greater part of knowledge was obtained in the preceptory office, the time spent in college being shorter. The schools conferred two degrees—bachelor and doctor of medicine. The requirements for a bachelor's degree were an apprenticeship with some respectable practitioner of two or more years, and attendance upon one course of lectures; for a doctor's degree, three years' office study, and two courses of lectures. The study of medicine was then less comprehensive than now, and consequently required less time and fewer teachers. The medical department of Dartmouth College was for many years successfully conducted by a single professor. Since the reorganization of the University of Pennsylvania, in 1792, until recently, no preliminary examination has been required for admission by the colleges. Previous to 1792, the importance of a preliminary education was appreciated, and various measures were adopted to secure a fair standard before the student was permitted to enter upon the study of medicine. The New Jersey State Medical Society, which was organized in 1766, desirous of elevating the standard of medical education, required that "the apprentice must be refused unless he has a competent knowledge of Latin, and some acquaintance with the rudiments of Greek, and will serve not less than four years, one of which may be spent abroad, and pay one hundred pounds proclamation money, as apprentice fee."

Laws to prevent quackery and protect the regular profession, were enacted at an early date. The General Assembly of New York, in 1760, passed the following law for this purpose: "Whereas, many ignorant and unskillful persons in physick and surgery, in order to gain a subsistence, do take upon themselves to administer physick and practice surgery in the city of New York, to the endangering of the lives and limbs of their patients; and many poor and ignorant persons inhabiting the same city, who have been persuaded to become their patients, have been sufferers thereby; for preventing such abuses for the future, Be it enacted, by His Honor the Lieutenant Governor, the Council and the General Assembly, and it is hereby enacted by the authority of the same: That from and after the publication of this act, no person whatsoever shall practice as a physician or surgeon in the said city of New York, before he shall first be examined in physick and surgery, and approved of, and admitted by one of His Majesty's Council, the judges of the Supreme Court, the King's attorney-general, and the mayor of the city of New

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York for the time being, or by three or more of them, taking to their assistance for such examination such proper person, or persons, as they in their discretion shall think fit; and if any candidate, after due examination of his learning and skill in physick and surgery as aforesaid, shall be approved and admitted to practice as a physician and surgeon, or both, the said examiners, or any three or more of them, shall give, under their hands and seals, to the person so admitted as aforesaid, a testimonial of his examination and admission." A failure to comply with this law subjected the person to a fine of five pounds. A similar but still more strict law was enacted by the General Assembly of New Jersey in 1772. This law required all persons who intended to practice medicine to be examined and licensed under the supervision of the Judges of the Supreme Court.

In 1799, the Medical and Chirurgical Faculty of the State of Maryland was incorporated. Power was conferred upon it to elect by ballot twelve persons of the greatest medical and chirurgical abilities in the state, who were called the Medical Board of Examiners for the State of Maryland. It was the duty of this board "to grant licenses to such medical and chirurgical gentlemen as they, either upon a full examination, or upon the production of diplomas from some respectable college, may judge adequate to commence the practice of the medical and chirurgical arts." A supplementary act, passed in 1801, required all graduates of medical colleges, as well as those possessing no diploma, to submit to an examination before this board, and obtain a license, before they were authorized to practice. Every person thus licensed, by virtue of the license, became a member of the state medical society.

The territorial government of Orleans, in 1803, approved a law regulating the practice of medicine. It provided that every person intending to practice must have a diploma, and submit to an examination before a board consisting of four physicians or surgeons; if he was found qualified, he received a license from the board. In 1816, when the territory had been admitted into the Union as the state of Louisiana, the first law was repealed and one substituted which provided for an examining board consisting of four physicians and one apothecary, appointed by the governor. A diploma did not exempt from examination by the board, and was not received as an equivalent for a license. The examination of the candidates had to be conducted in presence of the mayor of New Orleans and two aldermen. In 1817 the law was changed, two examining boards being created in place of one, and ten years of continued practice was received as sufficient authority to practice, and exempted from further examination. In 1820, the law was still further amended so that graduates from medical colleges were licensed without further examination, pro-

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vided the applicant could furnish the board with satisfactory evidence of a good moral character. In 1840 the law was again changed to the effect that the plan of organization of the boards was changed, and only the graduates from the Medical College of Louisiana were exempt from examination by the boards. In 1852, all previous legislative acts regulating the practice of medicine were repealed, and a law substituted by which any person with a genuine diploma or certificate from any chartered medical college or society in the United States, whether the same be allopathic or otherwise, was allowed to practice medicine, surgery and midwifery without any additional license. The law required at the same time that the person intending to practice medicine, unless he had been in active business for ten years at the time it was passed, should go before any justice of the peace and make affidavit that he is a graduate from some incorporated medical institution in Europe or America; the justice to record this affidavit in the office of the register of deeds, and to give a copy to the person making the affidavit.

The legislature of Delaware, in 1822, passed a law creating a board of medical examiners composed of twelve members, whose duty it should be to examine, and, if found qualified, to license all persons who practiced or intended to practice without a diploma. These persons had to furnish evidence that they were twenty-one years of age, had studied medicine three years, and had attended at least one course of lectures before they were admitted to the examination. Graduates were licensed by the board without examination.

The Medical Society of the District of Columbia was incorporated by an act of Congress in 1819, with power to appoint a board of censors composed of five members, whose duties were very similar to those appointed by the Delaware State Medical Society.

In 1817 the legislature of South Carolina enacted a law providing for the establishment of two boards of medical examiners in the state. Their duty was to examine, and, if found qualified, to license persons intending to practice medicine without a diploma. Non-compliance with this law subjected the offender to a fine in a sum not exceeding $500, or imprisonment for a term not exceeding two months. This law was in active operation until 1838, when it was repealed.

In Georgia a law was in existence from 1826 to 1835 by which a penalty of $500 was provided for all persons who should practice medicine in that state without a license from the board of medical examiners.

Alabama, in 1823, had five boards of medical examiners, each consisting of three members elected by a joint vote of both houses of the state legislature. They were located in different sections of the state, and their duties were similar to those of the medical boards of South Carolina. Mississippi

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had laws regulating the practice of medicine similar to those of South Carolina and Alabama, from the time it became a state, until 1834, when they were repealed.

In New York the power to license to practice was conferred upon the state and county medical societies at the organization of the former in 1806. No person was admitted to an examination before these bodies unless he was twenty-one years of age, and had studied medicine for a period of not less than three years with some respectable practitioner. In 1807 a tax of five dollars a month was imposed upon any person who practiced medicine or surgery without a license. In 1812 the fine was increased to twenty-five dollars for each and every offense. In 1843 the law was amended so that that part which related to fines was repealed.

Ohio, Tennessee, Indiana, Michigan, and most of the New England states, during the early period of their existence, had laws regulating the practice of medicine somewhat similar to those of the state of New York. In most of these states the boards of censors of the state and county medical societies, had the power of examining and licensing candidates. In some instances these boards consisted of the faculty of a medical college in the state, and an equal number of censors elected by the state medical society.

It will be seen that during the first half century of our national existence every state, with the exception of Pennsylvania, North Carolina and Virginia, had enacted laws restricting the practice of medicine. So potent was the influence brought to bear by the quack element upon the law-makers of the country, that during the years from 1840 to 1850, nearly all laws regulating the practice of medicine were repealed by the legislatures of the several states. For twenty years almost every state was without efficient medical legislation. The result has been an overflowing of the country with quacks of every description. This element has increased to such dangerous proportions, that during the last six years efforts have again been made in different states to arrest its further growth by legal enactments. The legislatures of Kentucky, Missouri, Vermont and New Hampshire, passed laws for this purpose in 1875; Texas in 1873; California in 1876; and Illinois in 1877. The California law prescribes that the State Medical Society of California, and the Homœopathic and Eclectic State Medical Societies, shall each appoint annually a board of medical examiners, consisting of seven members. The duties of these boards consists in ascertaining the genuineness of diplomas or certificates presented to them. If found genuine they issue a license to the applicant which entitles him to practice medicine and surgery in the state. All examinations of persons not graduates or licentiates, were made directly by these boards until Dec. 31, 1876; after this

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date they could confer license to practice only to such persons as were in possession of a diploma or license from legally chartered medical institutions in good standing. These boards are independent of each other, but no candidate rejected by one board can apply to another, and not to the same board until one year after such rejection. The boards have the power to revoke their license for unprofessional conduct. All licenses and certificates of revocation must be registered with the county clerk of the county in which the person resides. Traveling quacks are required to pay a license of one hundred dollars a month. Any person practicing medicine or surgery without having procured a license from one of the boards, shall be deemed guilty of a misdemeanor and shall be subjected to the penalties provided therefor.

In Illinois every person practicing medicine and surgery is required to appear before the state board of health and present his diploma for verification and genuineness. If it is found correct the board issues a certificate to that effect, and such diploma and certificate are conclusive as to the right of the holder to practice. If the applicant have no diploma he has to pass an examination before the board of health of a practical and elementary character, and if found qualified he receives a certificate in accordance with the facts. Two kinds of certificates are issued, viz.: for graduates, and for candidates who have been examined by the board. The board furnishes the county clerks with a list of persons who have received certificates. Every holder of a certificate must record the same with the county clerk of the county in which he resides, the books in which such records are made to be kept open for inspection. The board may refuse certificates to applicants guilty of unprofessional conduct, and revoke certificates for like reasons. Itinerant quacks are required to pay a monthly tax of one hundred dollars. Any person convicted of practicing medicine or surgery without having complied with the law is subject to a fine of not more than five hundred dollars, or imprisonment in the county jail for a term of not more than three hundred and sixty-five days.

From the foregoing laws it will be noticed that, with but few exceptions, a genuine diploma has been regarded as sufficient evidence of qualification, and if the law made provision for a license, this was conferred without any further examination. As colleges constituted thus not only institutions for instruction, but had at the same time power to confer upon their graduates authority to practice, it is not difficult to infer that the never-ceasing rivalry between them had a direct tendency to lower the standard of medical education. This evil was recognized at an early period, and measures were adopted to remedy it. At a meeting of the State Medical Society of New York, in 1839, the following

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resolution was reported by a committee and, after a free discussion, was adopted: "*Resolved*, That the right of teaching ought to be separated as much as possible from the power of conferring degrees or licenses." The following year, a committee, consisting of Drs. Manly, Beck and McCull, submitted to the society an able report bearing upon this same subject, in which occurs the following language: "But in view of the diploma becoming depreciated by the rapid establishment of new schools, it may well become a question deserving serious consideration, whether at no distant period the rights of teaching and licensing should not be disjoined. An incidental difficulty to the adoption of this suggestion, is the fact that we are surrounded by institutions in other states, which might or might not follow it, and thus our own students induced to desert our own colleges."

In 1837 a petition, signed by one hundred and twenty-six physicians, residents of the city of Philadelphia, was presented to the legislature of the state, for the purpose of establishing an institution for examining candidates and conferring degrees independent of the business of teaching. The charter was not granted and the project failed.

Dr. N. S. Davis, at a meeting of the New York State Medical Society in 1844, brought this matter again prominently before the profession; the discussion which followed resulted in a call for a convention of delegates from all medical colleges and societies in the United States, which was held in New York in 1846. The direct object for which this convention was called has never been realized, but the American Medical Association, which is the outgrowth of that meeting, has exerted a potent influence in elevating the standard of medical education throughout the land.

During the last ten years representatives from the different medical colleges have formed an association of their own, and have held several meetings for the purpose of adopting a uniform standard of requirements. A few of our colleges have adopted a longer term of study, a graded course of instruction, and a more rigid test at the final examination for the degree, but the majority of them continue to repeat two courses of lectures to mixed classes, and to issue diplomas to half-educated young men at the end of two years. This vicious practice will continue just so long as a diploma is regarded as sufficient authority to practice. You may as well attempt to reverse the motion of the earth, as to expect that a uniform standard of requirements will be adopted and carried out faithfully and honestly, unless the power of licensing is transferred to independent boards of medical examiners. This has been the experience not only in this country but all over the world. Small institutions that vegetate on the income derived from the students are afraid to raise the standard, for fear

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the students will desert them and seek institutions offering greater advantages. Under the present system the authority to license is vested in the small college, located in some obscure country village, equally as well as in the schools in our metropolitan cities, supplied with all the modern improvements for imparting theoretical and practical knowledge. Many of our students, for obvious reasons, attend those schools where the authority to practice medicine can be obtained in the shortest time, and at the least possible expense. If the licensing power were vested in an independent board of medical examiners, the rivalry between the different schools would cease to be injurious; the noble desire to impart a thorough knowledge to their students would then predominate over the vain ambition to turn out the largest number of graduates. The student would then seek those colleges which have the most abundant clinical and demonstrative facilities.

Medical societies exert a powerful influence over the educational interests of our profession. If the different medical societies, national, state, district, county and city will work harmoniously, by fixing a standard for preliminary education, and a thorough course of medical instruction, a great deal will be accomplished in forcing the colleges to follow the demands of the profession. The simplest and most certain method, however, to prevent the multiplication of medical colleges beyond the actual demand, and to secure physicians well trained in their profession, is to create a board of medical examiners in every state and territory, whose duty it shall be to examine every person practicing or intending to practice, without regard to a diploma or previous practice, and if qualified, to issue a license to practice. A license obtained from such a board should be considered the only lawful proof of qualification, and an essential prerequisite to practice. Unless some such laws are enacted our medical colleges will continue, from year to year, to flood the country with young men but partially prepared to discharge the duties of such an important profession. The ranks of our profession are already overcrowded. On an average we have one physician to every eight hundred inhabitants throughout the country. This overcrowding has been due to the fact that for years there have been no laws restricting the practice of medicine. To no other profession has the access been so easy and unrestrained. Any person has been allowed to assume the title of doctor, and tamper with human life. In the struggle for a livelihood the honest, educated physician has to contend with the unscrupulous, ignorant pretender. History abundantly illustrates the fact that wherever quackery was permitted to flourish without legal restraint, it not only lowered the dignity and honor of our profession in the estimation of the people, but

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in the unequal contest many worthy members were dragged into the most corrupt and disreputable practice.

But I am told that during the early period of our national existence laws regulating the practice of medicine were enacted in almost every state, and were subsequently repealed without having answered the expectations of those who were instrumental in bringing them into existence. Several reasons may be advanced to explain this apparent want of success. In many instances the legislation was premature; undertaken at a time when it was impossible to obtain a sufficient number of physicians to meet the requirements of the law. Again, in many instances, the board of medical examiners was a political body; its members were appointed by politicians, not as much for their ability as their political influence. This was a great mistake. A board, to be efficient, must be composed of honest, able men — men who will do their duty without regard to social or political influence. As long as such boards are controlled and influenced by politics, they will be failures—yes, worse than failures, they will be nuisances. The appointment of members, and the managment of such boards, should be conducted by medical men; they are the only competent judges to decide who is, and who is not, qualified for such an important position. The state medical societies, being the representatives of the profession, should make all such nominations, and assist and co-operate with the board of medical examiners.

Another great source of evil has been, is, and always will be, a lack of harmonious action on part of the members of the medical profession themselves. Too often, personal and selfish motives have usurped the place of the nobler desire to advance the interests of the community and profession at large. To our shame it must be said that no other profession presents such a sad spectacle of envy and discord. Our daily walks in life are not only embittered by numerous disappointments in practice, and the never-ceasing accusations on part of an ungrateful and ungenerous public, but at times are rendered almost unendurable by the rugged stones, thorns and thistles thrown around us by some of our own brethren. The same deplorable spirit of jealousy becomes apparent in the adoption of measures that are intended not so much to secure individual prosperity, as the well-being of the entire profession. If we could only agree with each other, we could not only regulate the practice of medicine, but we could rule the state. Our united influence would be felt in every phase of society; it would equally pervade the hovel of the poor and the mansion of the rich, and thus insure the co-operation of the people and their representatives.

The last, but not the least, cause of failure of past medical legislation in this country, has been that public opinion has usually failed to sustain

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the laws. The people have always been, and are still, unable to distinguish the physician from the quack. This assertion applies to the educated as well as the ignorant. They may exhibit admiration and respect for operative midwifery and surgical operations, but the practice of medicine remains to them a mystery. Wonders and miracles are still believed in by all classes, and their belief is not unfrequently encouraged and strengthened by the press. The faculty to heal disease is regarded by them just as much as a natural divine gift as the result of profound study and long-continued observation. The quacks, as a rule, are shrewd observers of human nature, and resort to every possible means to operate upon human credulity. On account of these vague ideas regarding the practice of medicine, the sympathy of the people has been too often on the side of quacks. The mass of the people must be educated; they must be made to understand that disease is not a mysterious something which yields to personal magnetism, laying on of hands, or wearing liver-pads, but that it is more generally the result of a violation of nature's laws, and amenable to a rational course of treatment. To enlist the attention and interest of the people, they must be made to understand the importance of a thorough knowledge of anatomy, physiology, and chemistry as prerequisites to the practice of medicine. Unless the people learn to appreciate the value and necessity of a thorough medical education, medical legislation for the purpose of restricting practice will be in vain. Laws may be passed, but they are certain to be repealed unless popular opinion bearing upon this subject undergoes a radical change.

But because medical legislation has not been so successful as we might desire, there is no reason that we should abandon such attempts. Every one of the laws previously passed has unquestionably been productive of some good. The experience of the past has revealed their merits as well as their defects. It is only by a careful study of the history of past medical legislation, that we shall be enabled to adopt measures that will prove more successful and permanent. We have laws prohibiting murder, stealing, and a host of other crimes, but because, in spite of such laws, crimes continue to be committed, no man of sound mind would ask for a repeal of these laws. As governments enact laws for the protection of life, property, peace and happiness of their constituents, they have not only an inherent right, but it becomes their imperative duty to protect those afflicted with disease against the inhuman deceptions of ignorant pretenders.

In this country medical legislation encounters another serious obstacle —the different schools of medicine. We can never expect that the state will adopt the practice of one particular school. In the treatment of disease an honest difference of opinion will always exist. What we can

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and should ask for, is the enactment of laws that will prohibit any person from practicing medicine or surgery who has not acquired a liberal knowledge of the fundamental branches of medical science, anatomy, physiology, and chemistry. There can be no difference among the schools in the practice of the mechanical part of the healing art — surgery and obstetrics; hence all alike should be required to possess a fair knowledge of these, the most important departments of our profession. I can conceive of no reason why members of the different schools of medicine should not unite in their efforts to secure such common-sense legislation, that is intended, not to regulate the kind of practice, but to expel quacks who now disgrace all of them. As long as the different schools will quarrel among themselves in relation to this matter, just so long will it be difficult to pass, and next to impossible to sustain, such laws. What we want is a board of medical examiners, composed of the best men of the profession, who shall determine, not the proficiency of any peculiar practice, but the elementary standing of the applicant. No diploma, no ten years' practice, ought to be accepted as sufficient evidence of qualification; a license, obtained after a thorough and impartial examination by a competent board, should constitute the only legal authority to practice. To enhance the probabilities of obtaining a strict law regulating the practice of medicine, it may be necessary to license in the beginning all who are in possession of a genuine diploma; but all those who settle in the state a specified time after the publication of such a law, should be examined irrespective of diplomas. Incompetent men, no matter how old they may be, or how long they may have pursued their wicked trade, should never receive the sanction of a license. With excellent medical colleges in almost every state of the Union, and with unequaled facilities for travel, there is no excuse for any person to-day to enter such an important and responsible calling without having obtained a thorough and practical education. The time has gone by when it was necessary to go to Europe for obtaining a medical education. Take away from our colleges the power to confer license, and they will be model institutions. We have the necessary capital, an abundance of brains, and an unequaled amount of energy and enterprise, that will at no distant future make our institutions the centre of medical knowledge in the world.

CONCLUSIONS.

1. Medical legislation should constitute a part of general legislation in every well organized government.

2. Laws to suppress quackery are necessary, to protect the people against the impositions of ignorant pretenders, and to sustain the influence and reputation of our profession.

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3. Teaching and licensing should be disjoined.

4. Partisanship among the different schools of medicine should give way to harmonious action, as far as medical legislation is concerned.

5. Boards of medical examiners should be appointed and managed by medical men, and should be, as far as possible, independent of political influence.

For your further consideration, I respectfully submit the following suggestions:

1. The time has arrived when it must be deemed expedient to enact laws in this state for the purpose of suppressing quackery.

2. The appointment of a committee of five members, who, with instructions from the Society, shall confer with similar committees from the now existing state medical societies in this state, for the purpose of preparing a bill regulating the practice of medicine in the state, to be presented to the next legislature for action.

3. The bill should provide for the establishment of a Board of Medical Examiners, to be composed of seven members, the nominations to be made by the state medical societies, the governor to confirm the nominations.

4. Each state medical society now in actual existence to be allowed representation on that board, the now existing membership of each society to be taken as a basis for representation.

5. The secretary of the board shall receive an annual salary of $500. The actual expenses of the remaining members of the board shall be defrayed, otherwise their services shall be gratuitous.

6. The Board of Medical Examiners, upon application, shall issue a license to practice medicine and surgery in the state to any person who is twenty-one years of age, and in possession of a genuine diploma, or a certificate of membership from any incorporated state medical society, or who has passed a satisfactory examination before a majority of the members of the board. Six months after the passage of the bill all persons not then licensed, intending to practice medicine or surgery, shall be required to pass an examination before the board, irrespective of diplomas.

7. Every licentiate shall be required to register the license in the office of the county clerk in the county in which he may reside.

8. The board shall publish annually a catalogue, for distribution, containing the names, residences and credentials of every licentiate in the state.

9. Any person who shall be convicted of practicing medicine or surgery without having complied with the requirements of the law shall

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be punished by a fine of not less than $25.00 or more than $500.00, or by imprisonment in the county jail for a term of not less than thirty days or more than three hundred and sixty-five days.

Gentlemen of the Medical Society of the State of Wisconsin: I hope that the important subject to which I have alluded so imperfectly will receive your most earnest attention. I trust that after a free and impartial discussion concerning this topic, you will adopt some measures towards securing early and effective legislation in this state. Wisconsin has always been one of the most progressive and enterprising of all the states. She has been foremost in agriculture, commerce, and in the advancement of her educational interest. Her inhabitants are an energetic, intelligent people. Her medical men can favorably compare with those of any other state. Shall we have a law that will protect the honest educated physician and preserve the esteem and purity of our profession? Shall we have a law that will prevent ignorant pretenders to prey upon the life-blood of our afflicted citizens to gratify their lust for gold? You must all agree that the time has come to take some action to exterminate this remnant of barbarism — quackery. The people of our state have always been willing and ready to adopt measures of reform, and I have no doubt its representatives in the legislature will co-operate with us, provided a bill is presented that will be reasonable and just to all. The people expect us to take the first steps.

"No; things will never right themselves,
'Tis we must put them right."

It is not only our duty to assist in enacting laws, but we are under obligation to help sustain and enforce them. The members of the Board of Medical Examiners will assume many unpleasant and responsible duties. In the discharge of their arduous labors they should be constantly encouraged by our advice, our assistance. Envy and selfishness should find no place in the heart of the true physician. To elevate our profession, to advance science, to prevent disease, to prolong life, to alleviate suffering, should be our highest, our only aim.

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ARTICLE III.

NEW AND IMPROVED INSTRUMENTS.

BY JOHN G. MEACHEM, M. D., OF RACINE, CHAIRMAN OF THE COMMITTEE ON SURGERY.

The science and art of Surgery has made rapid advancement within the last few years, and in no department has it been so great as in that devoted to the correction of deformities. The best men in our profession have given it their energy and study, and their inventive genius has brought to almost perfection appliances to fit and bring into shape every known deviation from the natural conformation. The shapeless, ugly form that fifty years ago was looked upon with horror and almost contempt, is by the appliances of modern surgery made comely and attractive.

Plastic and Rhinoplastic Surgery is wonderfully in advance of what it was a few years ago, and it would seem that there was but little left to be added to render this branch perfect. Fractures are not now treated after the same manner as in former years, and the great improvement in some varieties is daily witnessed in results. Urethral and other strictures are now comparatively easily overcome, while formerly they were dreaded and left untouched. The planting of islands of cells upon the sea-surface of sores is the result of very modern genius. Opening into the pleural cavity and into joints, aspiration, ovariotomy, exsection of bones, anæsthesia, antisepticism, etc., all belong to modern surgery. The improved new inventions and manufacture of instruments is only a part of the progress thus made. The demand has always had a ready supply. No matter how complicated the instrument required, the ingenious manufacturer has appeared to furnish it.

With considerable labor, correspondence with instrument makers, teachers, etc., I have secured a description of nearly all new instruments, and improved old ones, that have been manufactured during the past three or four years, and I hardly know how I could more interestingly or profitably discharge the duty imposed upon me by our worthy President, to the Society, than to make this the subject of my report at this meeting. Many of the descriptions will be given in the language of the inventors, as simple justice to them

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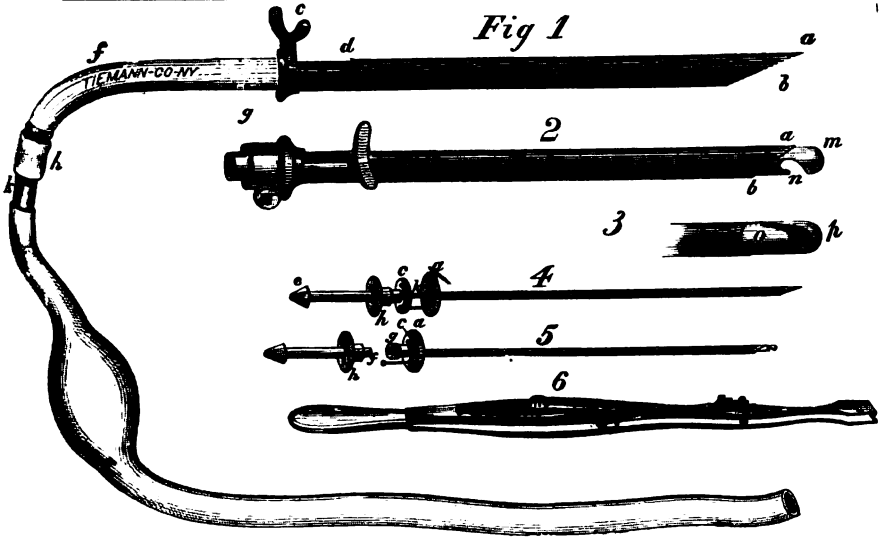

DOME TROCAR.

First, I will name the Dome Trocar of Dr. Fitch, which was first manufactured by Tiemann & Co. in 1877. It consists of a double canula, the outer of which has a pointed gouge cutting end, which is the perforating portion. The inner canula is supplied with a perfect dome extremity, which can be projected a little beyond the outer canula, so as to entirely protect parts pressing against the instrument while the fluid is being discharged through a mouth upon the under side, a few lines from its extremity. The proximal end of the trocar is so made as to be received into rubber tubing, to be attached to an aspirator when desired. I have used this instrument, which was made for me by Tiemann & Co., several times, and I can say that it has answered my expectations perfectly.

Prof. Austin Flint has devised a very useful trocar for paracentesis, abscesses, etc., with rubber attachment and stop-cock. This instrument most effectually prevents the ingress of air into the cavity.

Mr. Siefert, of Buffalo, manufactured to my order some years ago a flat trocar with a lancet point, the canula being composed of two parts, fastened with screws. I have found it more easy of introduction than any other, and for that reason have used it more. I do not now remember to have seen any other of the kind.

Dr. Clay's new Insufflator is a very ingenious instrument, to be used for the treatment of diseases of the throat and uterus. It is made in shape like a Simpson's uterine sound, but is a canula, through which passes a strong wire, having a bulbous end acting as a plug. One end

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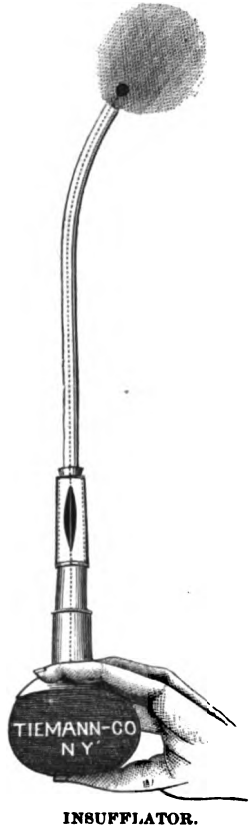
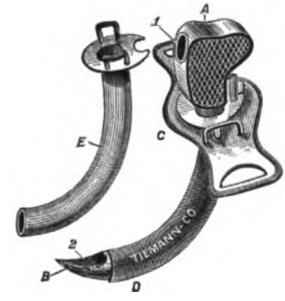


INSUFFLATOR.

is supplied with a rubber ball, which, when pressed upon, pushes the wire forward half an inch, throwing the plug sufficiently far from the end to allow perfect insufflation to take place. The powder is placed in an opening in the side of the canula a little below the rubber ball; a sliding ferule protecting it. Fowler's and Lefferts' are also good instruments, and are used for the same purpose.

Dr. Hanks first introduced his new Tracheotome in 1877, and to my mind it is a great improvement over all other instruments of the kind. "It consists of a curved, hollow, sharp-pointed trocar, with handle (also hollow) attached — the whole about three and a half inches in length. It is made to exactly fit the largest of the tracheotomy tubes. In operating, the best way will be to cut down upon the trachea which must be held firmly by tenacula, and then force the trocar with the larger canula through between any two of the rings. When the instrument has entered the trachea, the trocar may be removed and the smaller canula substituted and fastened in the usual manner. The advantages of this instrument are that but little, if any, blood can enter the trachea, and that air is supplied directly and instantly." It can be used on lean subjects without a previous incision being made.



TRACHEOTOME.

The Trachea Tube of Trendelenberg is made of silver, with a soft rubber inflator over the tube. By filling the inflator with air, the trachea is completely filled up, which prevents the blood from getting into the trachea and lungs while the surgeon is operating upon the throat.

Pilcher and Elsburgh have each dilating forceps, consisting of three blades, worked by closing the handles similar to a pair of scissors, used for the purpose of allowing the ready removal of false membrane.

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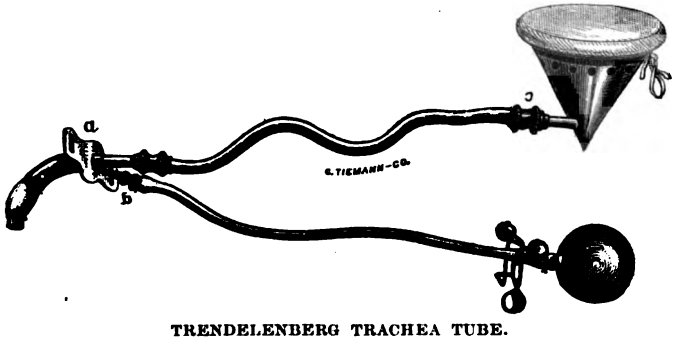
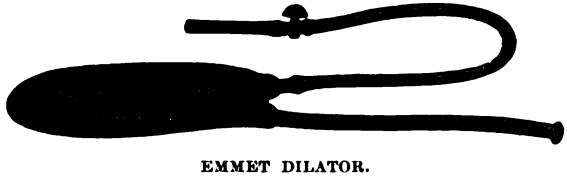


TRENDELENBERG TRACHEA TUBE.

Dr. I. N. Steurer, of New York, has invented a urethral and uterine dilator, in which water is used as the power. "It is composed of a hollow canula with a bulb at the end. The lower part is made of pure copper, or a spiral spring, to render it flexible. Over this is a membranous tube fastened at both ends. The canula is perforated within the membrane to allow for passage of water. To the canula is attached a hard rubber syringe with a graduated piston, and worked with a rack and pinion, the latter being removable. There is also a rubber band attached to the head of the syringe, and passes through the ring of the piston, so that by its own elasticity it draws the latter down, thus making the instrument work automatically, and in proportion as the stricture dilates, the membrane becomes distended." There has been some objection to the membrane on account of the possibility of its proving a source of the propagation of disease, but it is said that the soaking of it in carbolized water obviates all danger.

The Flexion Straightener and Dilator of A. S. Hunter, of New York, is a very powerful and effective instrument. It consists of two nicely polished plates of steel, having a diamond-shaped dilatation at about the beginning of the lower third, into which is fitted a diamond-shaped plug, which is connected with a screw at the handle of the instrument. When the plug is pushed forward by the screw the blades are opened.



EMMET DILATOR.

The Dilator of Dr. John Ball works on the screw plan also. That of Dr. Atles is on the scissors plan, but reversed, for when the handles

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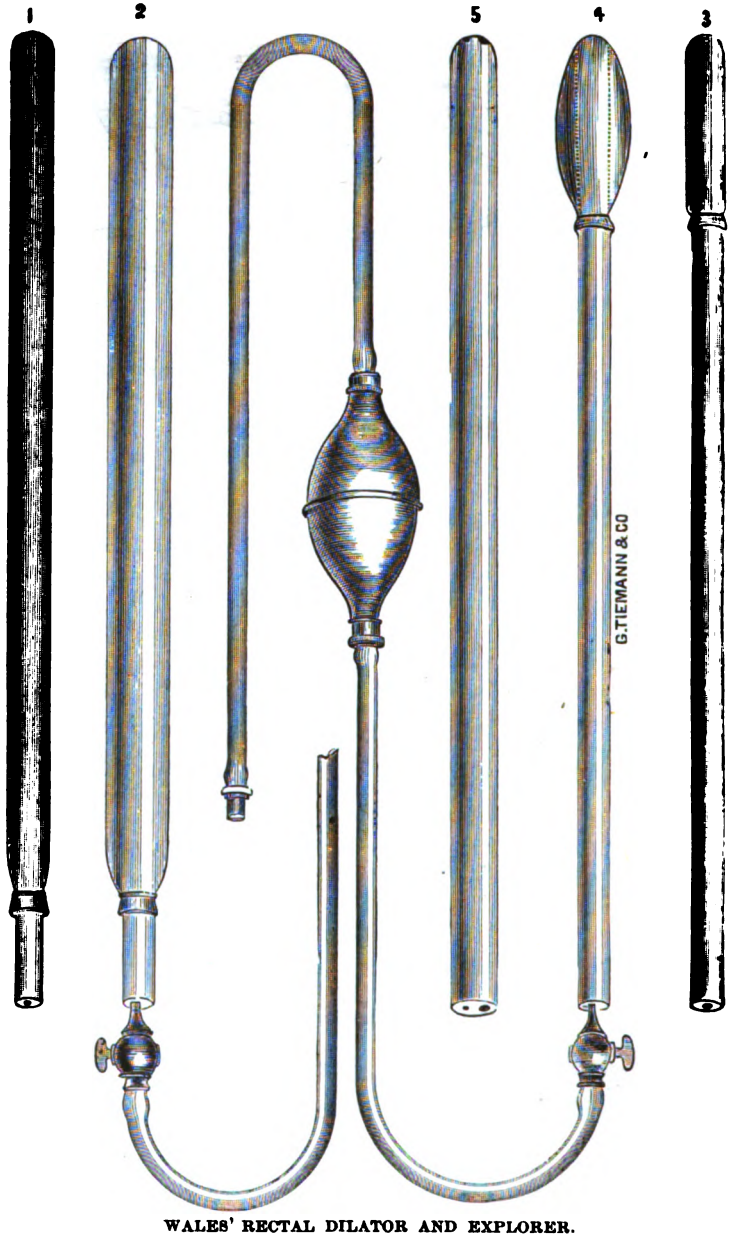

WALES' RECTAL DILATOR AND EXPLORER.

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close the blades open. Emmet's and Skene's are of soft rubber, with stop-cocks attached, and operate by being inflated with air.

Dr. Philip S. Wales, of the United States navy, has a Rectal Dilator and Explorer, made of rubber, which he claims superior to all others in use.

FLEXIBLE UTERINE SOUND.

Dr. E. W. Jenks, President of Detroit Medical College, has invented a most excellent Flexible Uterine Sound. "Three and a half inches of the end is flexible. There is also upon the sound a scale of inches and fractions, with a slide and screw, by means of which the operator can tell, while it is within the uterus, the depth to which it has entered."

ATOMIZER.

A great number of Atomizers have been constructed for the local application of the spray, and for use in antiseptic surgery. Among the recently invented is one by Codman & Shurtleff, of Boston, worked by compressed air, which is very superior. Tiemann, Drs. Huel, Hanks, Weir and De Beers each have good instruments worked by steam. Many patterns of the hand atomizers now in use have been greatly improved upon within the past two years.

An Endoscope, invented by Dr. A. C. Skene last year, brings to view the internal surface of the urethra, bladder, rectum, etc., with a distinct-

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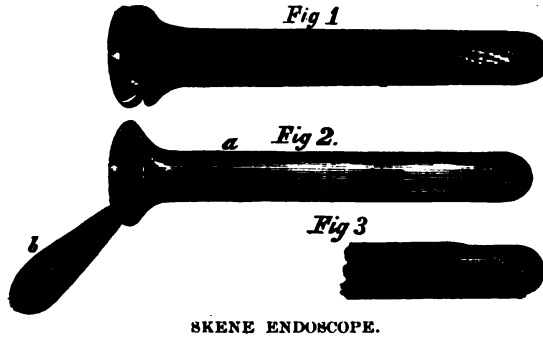
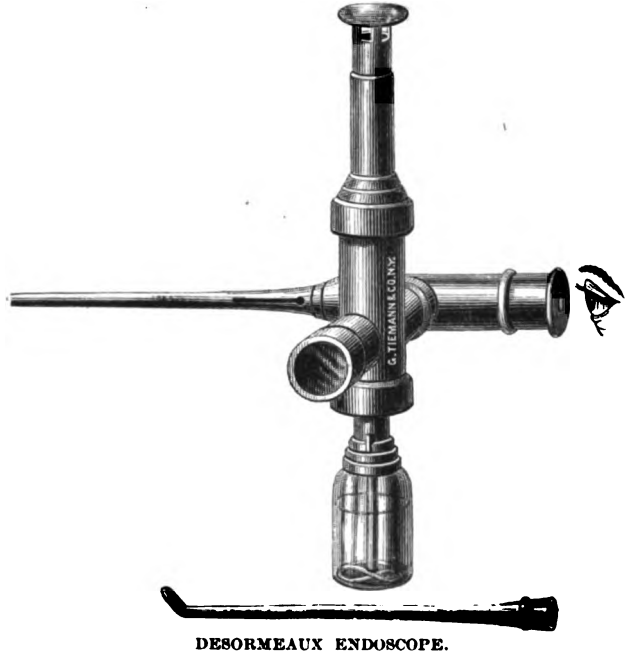


SKENE ENDOSCOPE.

ness that has never before been attained. "The instrument has three parts composing it. A glass tube, shaped exactly like a chemical test tube, except that the mouth is a little more flaring; a mirror with handle attached, and a hard rubber tube similar to the glass one in shape, and fitting over it, having near the closed extremity a fenestra, through which applications can be made to diseased points. The mirror is of high reflecting power, and placed at an angle, while the handle is bent in an opposite direction to the mirror. It can be moved forward or backward,



DESORMEAUX ENDOSCOPE.

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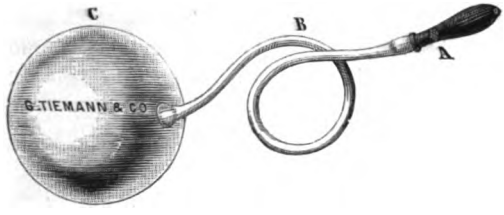
or turned in any direction, so that when the tube is introduced into the urethra, rectum, or any other canal, all the exposed surfaces can be brought into view, while the tube itself remains stationary." Of course, it is necessary to throw a strong light into the instrument by means of a concave mirror.

Desormeaux Endoscope set is very complete but expensive, costing about sixty dollars.



Dr. Samuel Sexton has invented a new instrument for treating acute and chronic diseases of the middle ear, which consists of a soft rubber ball and flexible rubber tube, to the end of which is attached an olive-shaped hard rubber nozzle, to fit air-tight into the entrance of the external auditory meatus. He has also a syringe which he calls "Rarefactor."

"VELVET EYE."

Tiemann & Co. have greatly improved the soft rubber catheters of Nelaton and Jaques', by rendering the eye of the instrument perfectly smooth. They call theirs the "Velvet-Eye," in contradistinction to the French and English make.

Dr. Hueter has invented a flat male catheter, which is the exact shape of the urethra. "The common pathologic difficulties of catheterism, such as stricture and prostatic swellings, belong to the posterior division of the urethra, the parsbulbosa, membranacea and prostatica."

Dr. Rose, in describing this catheter, says: "The shape of catheters made of unyielding material, must be accommodated to the shape of the canal of the urethra in these parts. The meatus of the urethra is a vertical slit which, at the fossa navicularis, becomes horizontal, pretty large

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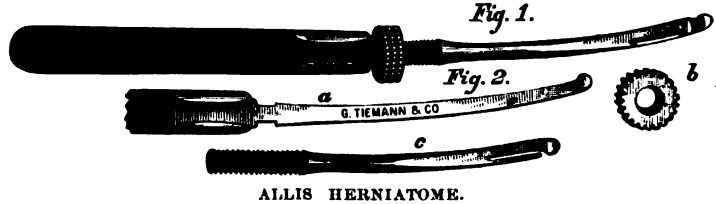
in the pars cavernosa, narrowing in the pars membranacea, without losing, however, the character of a horizontal flat slit. If the dilatability of the urethral walls was greatest in the direction of the median line of the body, and less in the lateral direction, an ordinary sound might pass the slit with but little more difficulty than the flattened instrument.

"Hueter found the dilatability of the urethra by filling the passage in cadaver with a hardened substance, and then obtained the cast of the conduit by corrosion of the surrounding soft parts. The cast showed that the center part of the urethra, being the largest, is also the most capable of dilatation; here the cast is round, and a round metal staff will pass as easily as a flat one; corresponding to the pars membranacea, however, the cast becoming oval, or rather, as both urethral walls meet in nearly acute angles, spindle-shaped, the use of the flat catheter is indicated."

The eyes of the Hueter catheter are upon the flat surface, anteriorly and posteriorly. It is the opinion of most of those who have used this instrument, that it will gradually supersede all other forms as soon as it becomes sufficiently known.



ALLIS HERNIATOME.

Dr. Oscar H. Allis is the inventor of a new Herniatome. Dr. Allis, after advocating early operative interference, says: "The chief difficulties experienced by the surgeon are met as the operation nears its completion. Lawrence, Sir Astley Cooper, Cloquet, Jobert and Liston have all had the candor to acknowledge wounding the gut; and dangerous, if not fatal hemorrhage is recorded in seventeen cases. To render the operation as free from danger as possible, hernia knives and hernia directors have from time to time been devised. I have never had occasion to use a director. I have always found the forefinger of the left hand the best and safest guide. By it the gut can be held out of the way, while at the same time the borders, extent and precise situation of the ring are being mapped out. The finger becomes thus a living, intelligent director to the blade, and is more frequently brought into requisition than other guides. It is when the constriction can not be detected by the finger that the directors are necessary, and hence, one can not be prepared for emergencies without them.

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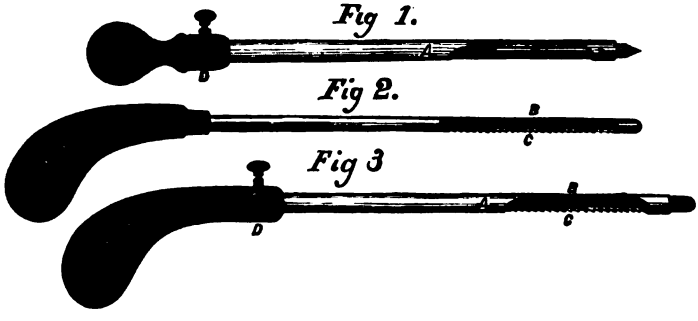
"Through the skill and patience of Messrs. Tiemann & Co. I have added to my instruments a Herniatome that I think will render the operation free from the dangers just enumerated. The blade is entirely covered and cannot be made to cut anything. In this condition the blunt point of the knife may be carried down along the finger to and beyond the constricting band. The blade, by turning a nut, can now be gradually uncovered, while at the same time the tip of the instrument is pressed against the fibers of the ring, which will yield as soon as it comes in contact with the cutting edge of the knife. Now, the special excellence of the knife is that the amount of cutting surface can be regulated while the point of the blade is out of sight."



Dr. Geo. F. Shrady, of New York, has quite recently devised a knife, saw and rasp for subcutaneous operations. "A short time ago," he says, "having occasion to operate upon a case of ununited fracture of the tibia and fibula, I felt the want of a subcutaneous saw and rasp which would bare and roughen the ends of the fragments; at the same time there would be no danger of injuring the soft parts. I accordingly devised this instrument. I believe there can be no doubt of its perfect working, and of its extended usefulness, and therefore accordingly offer it to the profession."

The Jennison Exploring and Indicating Sound is a wonderfully convenient and ingenious instrument, and is so constructed that any single or simple curve made in either of the flexible ends will be reproduced in an inverted form in the other. It is manufactured by Codman & Shurtleff, of Boston.

Dr. Leonard has recently devised a uterine sound which he calls the "Metric Sound."

Dr. W. H. Bates has invented a new Urethrotome, which he offers as an adjunct to Dr. Otis' Dilating Urethrotome. "It consists of a handle, to which is attached a steel canula, eight inches long, containing a con-

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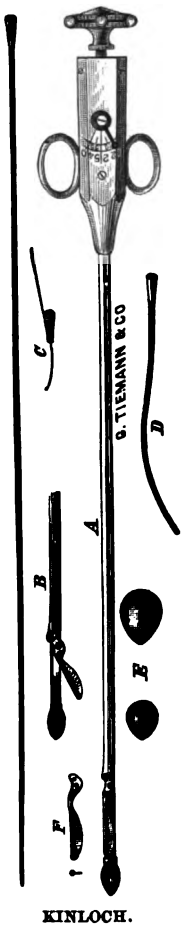
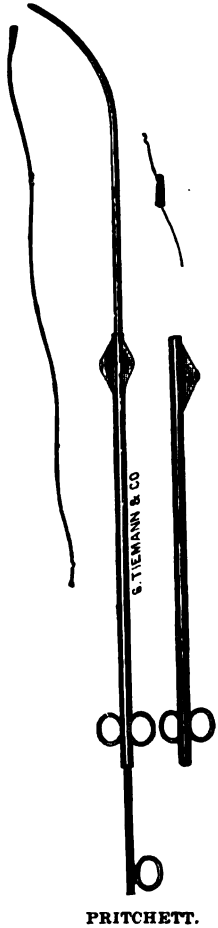
cealed knife, which may be projected to the extent of twenty millimeters. The instrument terminates in a 'bridged' top, which screws on the canula. There are two of these tips accompanying each instrument, pointing in opposite directions, for the purpose of enabling the operator to use the knife either on the upper or under surface of the urethra, as he may deem advisable. The blade is concealed in the end of the canula, and is projected by turning the screw in the end of the handle. To the handle is attached a scale with an index, such as is used by Dr. Otis on his instrument, which enables the operator to know and govern the exact limits of his incision."

BATES.



KINLOCH.



PRITCHETT.

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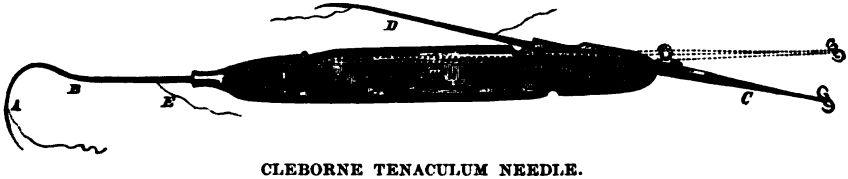
Dr. R. A. Kinloch, of Charleston, S. C., has devised an instrument which he calls Bulbous-Headed Dilating Urethrotome. He says: "The instrument that I now respectfully offer to the profession has in my hands proved efficient. It is a ball probe or urethral explorer, and also an efficient urethrotome for cutting from behind forwards." It has a dial plate and indicator attached to the handle of the staff, resembling those attached to Prof. Otis' Urethrotome and Urethrometer.

Dr. John A. Pritchett, of Alabama, has invented what he calls a new Rotating Urethrotome. He claims for it great simplicity of construction, and small size of staff; the possibility of cutting the stricture with equal facility at any point of its circumference, or at any number of such points; can easily divide the stricture to natural size of healthy urethra.

Dr. Lowel has invented a water band and soft rubber pad, for pressure upon the axillary artery as an accompaniment to Esmarch rubber tourniquet. The advantage claimed for the band is, the water being distributed equally through the tube, produces an equal soft pressure around the limb, and can not injure the nerves, destroy the tissue, or produce lymphatitis from continued pressure.

Dr. Loring has greatly improved the Ophthalmoscope, and Wadsworth has added an improvement to Loring's.

Dr. Hoff has an automatic Suture.



CLEBORNE TENACULUM NEEDLE.

Dr. C. J. Cleborne, of the United States navy, has a Tenaculum Needle, and new wire-twister, and a new material for sutures. The material is finely-finished three-ply thread, known as hard-ash. "It is very strong, creates less irritation than silk, does not need waxing, and is particularly well fitted for tubular needles. Like other vegetable fiber it may be 'cellulosed' by dipping for a few seconds into a mixture of sulphuric acid and water, two volumes of the former to four of the latter, then washing and neutralizing the acid with dilute ammonia. The texture is at once changed into an unalterable material analagous to animal mem-

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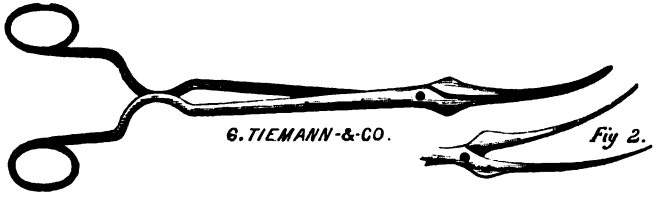
brane, which increases in toughness and flexibility by moisture, and is superior to catgut or other animal ligature."

Dr. Bixby has invented a Double Trocar and Canula, for the ready and effective use of the double current in the treatment of suppurative cavities, and in pelvic drainage.

Several new Intra Uterine Scarificators have been introduced of late; among them may be named Miller's, Pinkham's, Stevens' and Cutter's.

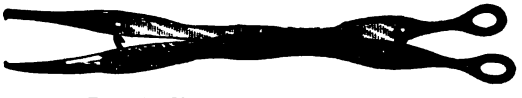


Also, Dilating Forceps, as Nott's, Codman & Shurtleff's modification of Ellinger's, so constructed that the branches remain parallel during dilatation.

Bigelow's Sinus Dilator is a powerful instrument, and very useful for the immediate dilatation of deep sinuses, whether for exploration with the finger, or for the removal of dead bone, etc.

Dr. Gouley has a clamp for straightening the nose.

Dr. Van Buren has given to the profession a capped sound or Ointment Applicator.



Dr. Cleborne a Double Forceps.

Dr. Woodward, a Uterine Syphon Douche, simple and effective.

A great variety of Specula has been brought as new within the last three or four years. The instrument of Dr. W. B. Gillette is a Nott's modification of Cusco's, with a Sims blade and handle, which can be screwed on when needed. The blade has also Van Buren's curve for examination of the rectum. It can be used in the supine or semi-prone position of the patient, by detaching or attaching the Sims blade. Dr. Winslow has still further modified this by making the flanges, screw and button detachable. Remove these, we have a Sims Speculum, attaching them, and unscrewing them we have left a Nott's Cusco's Speculum.

Dr. A. Shiland, of West Troy, N. Y., has devised an ingenious instrument which seems to answer all the requirements, and has not the objectionable feature of specula now in use. "The blades are about

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one-third the width of the ordinary speculum, and are connected by a series of rings, in such a manner that the instrument may be opened and closed by a small handle connected with the primary rings. Depressing the handle, or one of the blades, or elevating the same, opens or closes the instrument, as desired. When the rings are horizontal, and the blades vertical, the speculum remains open and retains its position. It may be rotated as desired, exposing every part of the vaginal walls and os uteri and thus afford the greatest facility for making applications."

Dr. Alex. S. Hunter has devised a speculum which he claims to be much superior to any before in use. It is an instrument made to operate on the principle of the fulcrum and lever. He speaks of it in the following laudatory manner: "1. It gives the largest opening capacity with the least relative distension of the sphincter, and but one size of instrument is required. 2. It brings the uterus nearer the vulva. 3. No part of the instrument projects beyond the vulva to interfere with the manipulations of the operator. 4. It is self-retaining, and will of itself maintain the position desired. 5. It fixes the cervix uteri. 6. It more thoroughly illuminates, and more effectually excludes the vaginal folds. 7. It does not unduly distend the vagina at its uterine attachment. 8. It is the simplest constructed, and is therefore the easiest used and cleaned. 9. It effectually removes the utero-vaginal angle, and does it without manual assistance."

HUNTER SPECULUM.

Dr. F. W. Graves, of Woburn, Mass., has given to the profession an excellent speculum. "In introducing a new speculum (combination) to the notice of the profession," he says, "I wish to state in the beginning that it is not original in its arrangements, being a combination of the bi-valve and Sims speculum, with the addition of an extending, or rather, distending movement, that is frequently used for surgical purposes, but the instrument in its entirety is new, so far as my knowledge extends. The expansion of the blades is accomplished by a short side lever, which has been arranged with special reference to the accomplishment of its

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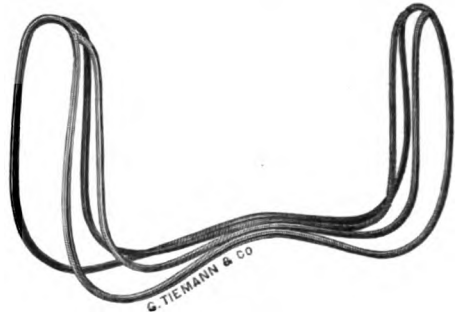
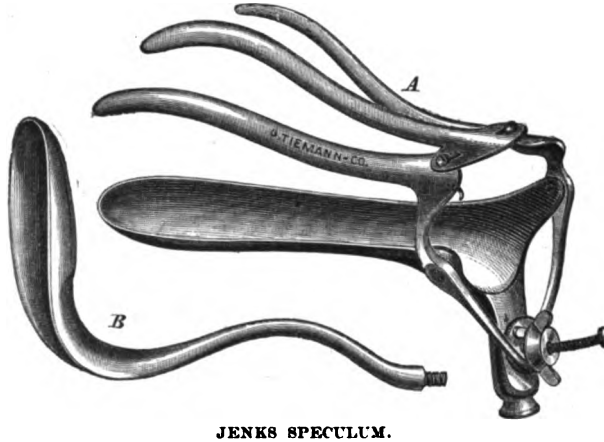
purpose without the use of too much metal, or interference with the manipulation of the operator. When reversed, the instrument can be used as a Sims, and as such gives very satisfactory results.



FRYER SPECULUM.

Dr. B. E. Fryer of the United States army, uses a speculum after the Sims pattern, but made of wire, consisting of four strands of one-eighth of an inch wire. He says, "In rectal cases more especially, although it applies to the vaginal also, we can at a glance get a view of the entire mucous membrane, which is impossible with the solid instrument of Sims."

Prof. E. W. Jenks, of Detroit, has added one more speculum to the already numerous list, and to my mind it is the best instrument in use.



JENKS SPECULUM.

It is after the pattern of Dr. Nott's with a fourth blade added, which makes it a better self-retainer, and more effectually distends the vaginal canal.

Dr. Richardson has invented a splint made of hard rubber for fracture of the clavicle, humerus and scapula. It is very simple in construction and application, differing from all other appliances in not interfering with the opposite shoulder, and, I believe, better adapted for its purpose than anything heretofore introduced.

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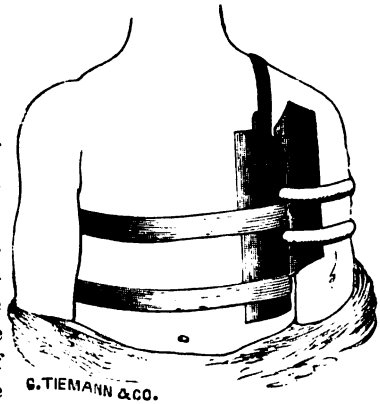
Dr. R. Park, of Chicago, has invented, within the year, a new Metalic Fracture Splint, "the object of which," he says, "is to produce extension and counter-extension of fractured femur in direct line with the axis of the body."



RICHARDSON SPLINT.

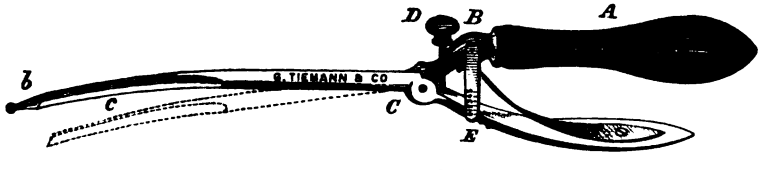
Ahl's Adjustable Porous Splints have been tested in the most unqualified manner by many of the most distinguished surgeons of the country. "The splints are made of a tough, flexible material, about the thickness of heavy binders' board, and are moulded to the perfect form of the limbs over models."

The Club-foot Shoe of Sayre of New York, Autenrieths of Cincinnati, and Kolbe of Philadelphia, are among the best in use, and have all received recent improvements.

The Splints of Sayre, Bauer, Taylor, Wood and Andrews, for disease of hip, knee and ankle joints, are as near perfection, it seems to me, as can be made.

Dr. Andrews' instrument for anchylosis of the knee, and his support for Pott's disease of the spine, deserves particular mention.

The Electro-Cautery in certain surgical operations is fast becoming resorted to, and as a necessary result many are the claimants for the best instrument introduced for the purpose. Drs. Pifford, Bryne, Bartlett and Davidson represent some of the best.



HUTCHINSON LITHOTOME.

Dr. I. C. Hutchinson has invented a new double-bladed Lithotome. "It is for bi-lateral lithotomy. It possesses the advantages of Dupuytren's instrument, of which this should be regarded as a modification, and being more simple in its construction, is more easily manipulated, and is less expensive.

Dr. J. O. Roe, of Rochester, N. Y., has devised a convenient and inexpensive inhaler, which promises to give very general satisfaction. Cod-

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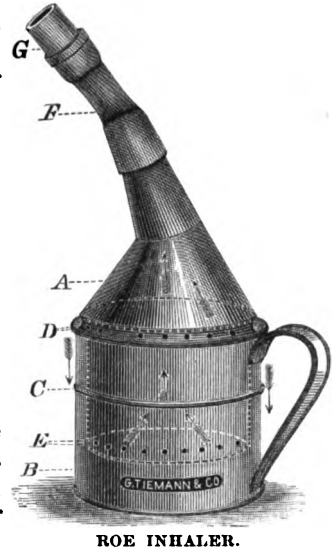
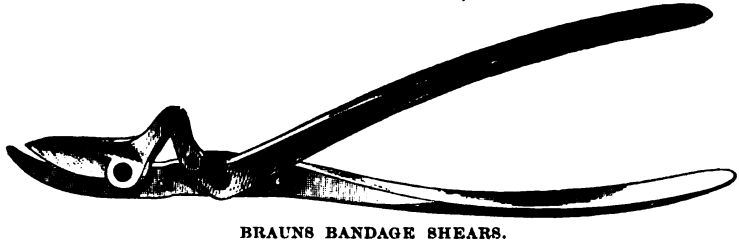
man & Shurtleff's and Tiemann & Co.'s inhaler for nitrous oxide, chloroform and ether, and for the administration of oxygen and other gases, are the very best in the market.



ROE INHALER.

Shephard & Dudley have a new apparatus for preparing plaster-of-Paris bandages for surgical dressings. "It consists of a pan made of tin, japanned for appearance and protection from rust. On the inside, one inch from the bottom, two brass rods pass across for the purpose of keeping the bandage flat and even. To prepare the bandage, insert it under the rods, and bring it up to the crank roller or spindle, give a few turns to secure it, then throw into the pan and upon the roller about a cup full of plaster-of-Paris, then roll the bandage. The rods at the bottom distribute the plaster evenly, and force it into the meshes of the cloth." Tiemann also has one equally as good.


BRAUNS BANDAGE SHEARS.

Brauns, Szymanovskys and Wm. Autenrieth have constructed powerful shears for cutting the hardened plaster bandage.

SZYMANOVSKYS BANDAGE SHEARS.

The plaster-of-Paris bandage in the treatment of Pott's disease of the spine, is now extensively used, both in this country and in

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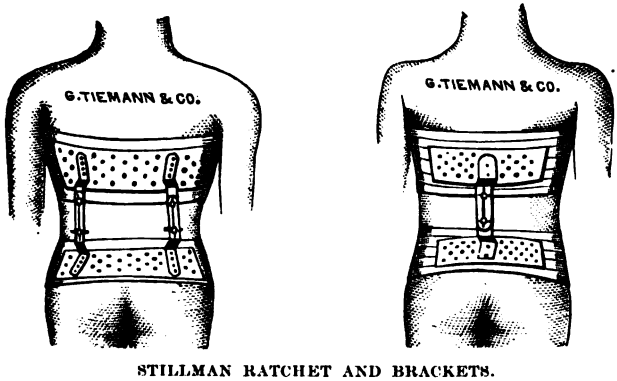
Europe. The great champion of the practice, Dr. Lewis A. Sayre, has already applied it sixteen hundred times. (New York Med. and Surg. Brief.)

Glisson and Sayre both have swings for stretching the spine preparatory to the application of the plaster dressing.

Dr. Jas. R. Wood, of New York, has a most perfect apparatus for the relief of wry-neck. Shephard & Dudley an ingenious arrangement for the cure of anterior curvature of the neck.

SAYRE SWING.

Dr. Charles F. Stillman, of New Jersey, has introduced improved appliances for the mechanical treatment of joints. Dr. S. says: "For the successful treatment of injuries or diseases of the human frame, immobility has always been recognized as one of the chief requisites. But it often becomes necessary to supplement the immobility with extension or retraction, in order to overcome deformity, or separate diseased surfaces from one another. Facilities for inspection of the diseased parts may be added as a third condition.



STILLMAN RATCHET AND BRACKETS.

To combine these has been a problem engaging the ablest minds in surgery for years. It has been reserved for the year 1878 to bring forward a

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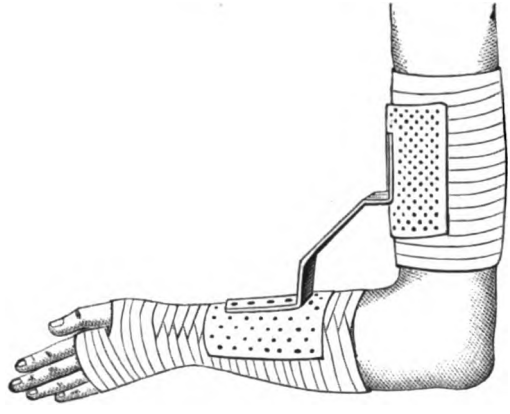
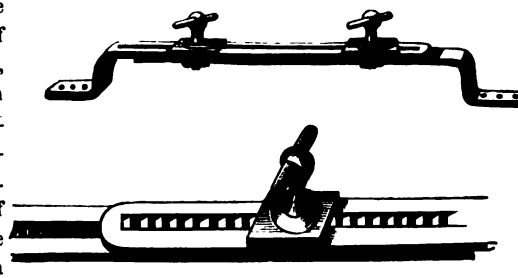
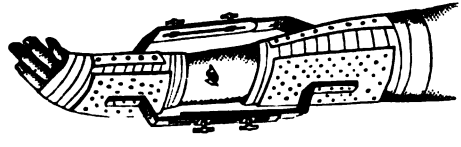
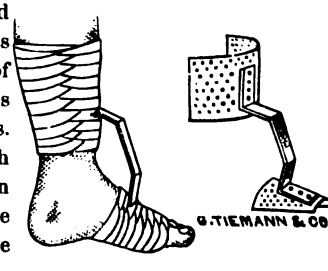


system of appliances for the mechanical treatment of abnormal conditions of the human frame, founded upon principles which allow of its application alike to all portions of the body, and yet so simple and inexpensive that it can be generally adopted." His means are immovable dressings and adjustable brackets. The former are used to form the base upon which the terminal plates of the latter are to rest, and to secure them in position, and consist of plaster-of-Paris and starch. The brackets are of perforated zinc plate with a bridge of thin wrought iron, and a ratchet inserted into the bridge, for purposes of extension or retraction. The brackets are used in pairs. Dr. Stillman is to be commended for his zeal, but time alone must prove the value of the invention.





F. A. Stohlman, of Tiemann & Co., has invented a most ingenious saw to take the place of the long used chain-saw in most cases. "It consists of two handles connected by a wire of cast steel, on to which are strung a series of steel beads with sharp cutting edges. No needle is required to carry it through or around the bone, and its beads can be readily strung on a new wire in case of a break. The beads by their free



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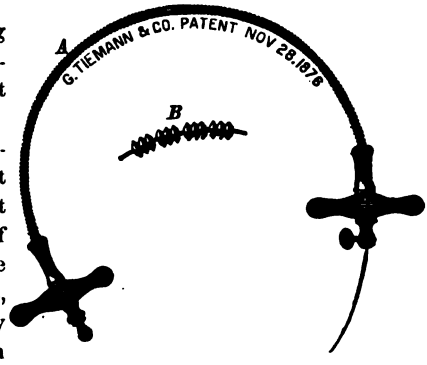
rotation present fresh cutting edges." The price of the instrument is not nearly as great as the chain-saw.

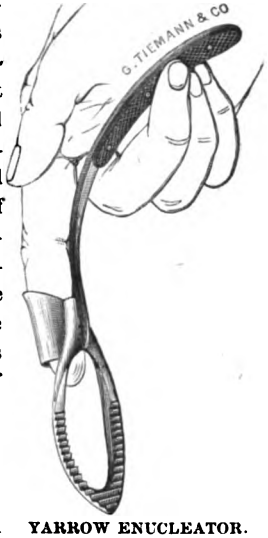


STOHLMAN SAW.

Tiemann & Co. are manufacturing an instrument that they call Apparitor Auris. It is a powerful aid to the deaf in hearing. "They are made of silver, and sold in pairs, and are so shaped that they can be worn entirely within the concha, being almost unobserved on account of their close fit and flesh color, the surface being enameled. The advantage of this instrument over the well known cornet, consists in having the canal elongated and over-bridged, so the sound entering the aperture cannot diffuse, but is conducted within the tunnel through the meatus auditorius to the tympanum."

TIEMANN APPARITOR AURIS.

The Improved Enucleator of Dr. H. C. Yarrow, of Washington, is a modification of Thomas' Serrated Scoop, which is also a new instrument. "The first part is an oval spoon-shaped fenestrated scoop, with serrations on the edge and face; the second part is a collar, or band of flexible steel, with a slit in its posterior surface to fit on the finger, and is held in the hollow of the palm by the middle, ring and little fingers. The handle gives a support to the scoop part of the instrument, and reinforces the index finger so that almost any amount of reasonable force may be applied."



YARROW ENUCLEATOR.

Dr. Robert F. Weir, of New York, presented to the profession last year a very powerful mouth gag or dilator.

Dr. Henry Bigelow, of Boston, an improved

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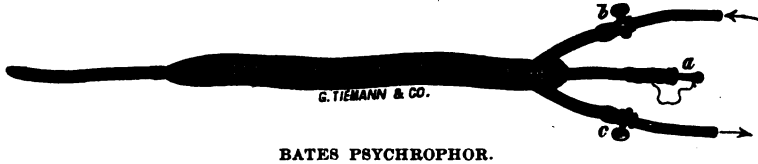
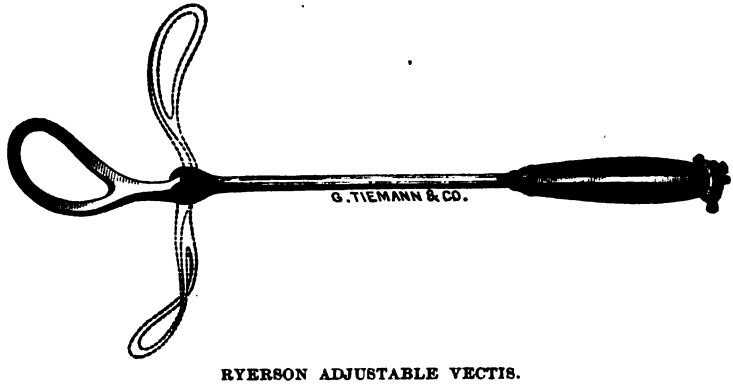


BATES PSYCHROPHOR.

Lithotrite, and also an improved evacuating apparatus for the bladder.

Dr. Bates, of Brooklyn, a new Psychrophor for urethral hemorrhage.

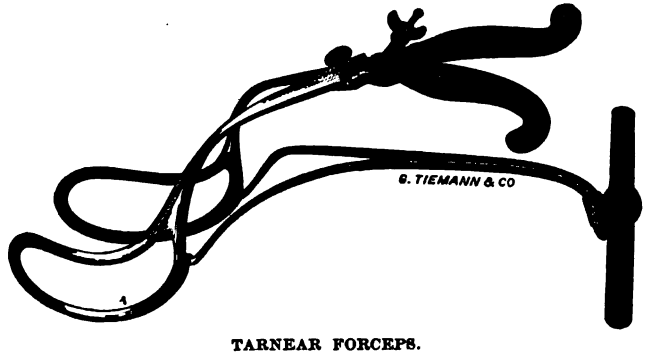
Dr. Prince, of Illinois, an excellent instrument to be used in the operation of Staphylorrhaphy.



RYERSON ADJUSTABLE VECTIS.

Dr. Thomas Ryerson, of New Jersey, an Adjustable Vectis.

The new Obstetrical Forceps of Dr. Tarnear of Paris, is much talked of by obstetricians at the present time. Dr. Fordyce Barker, of the Bellevue, thus states in regard to it: "Mr Tarnear claims that when the head is at or above the superior strait, with the forceps in ordinary use it is impossible to make traction in the exact axis of that strait because



TARNEAR FORCEPS.

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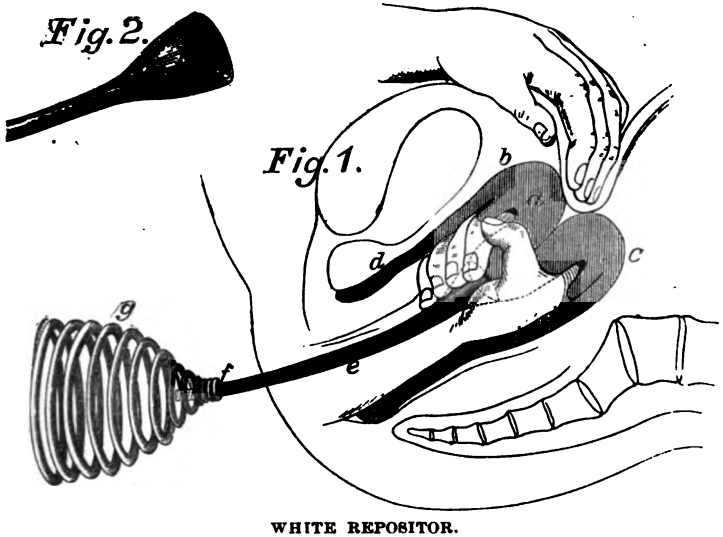
of the resistance to the direction of the handles by the perineum. It is necessary to make traction in a line somewhat forward of the axis of the superior strait, hence a certain amount of injurious force is necessarily wasted against the posterior surface of the symphysis pubis. In Tarnear's instrument this is obviated by a posterior curve in the blades, which permits traction to be made in the axis of the superior strait, without making undue pressure backwards upon the soft parts. The traction is made by independent rods, which are attached to the posterior border of the blades of the instrument in a cross-bar just beyond the handles."



WHITE REPOSITOR.

Prof. James P. White, of Buffalo, has devised an instrument which he calls Repositor, to aid in restoring the inverted womb, an undertaking in which he has been most remarkably successful. It consists of a hard rubber cup, attached to a graduated coiled spring. The action of the spring is to produce a continuous steady pressure upon the inverted fundus until it is restored to its proper position.

Dr. B. Squires has devised an instrument which he calls the Multiple Scarifier, to be used in the treatment of some forms of skin diseases, nevus materni, port wine marks, etc. It consists of a number of extremely fine scalpels, placed parallel to one another, on a single handle, having a curved shield on either side to prevent the outside blades from cutting deeper than the central. The part to be operated upon is to be chilled by the ether spray. "At each operation the parallel cuts should

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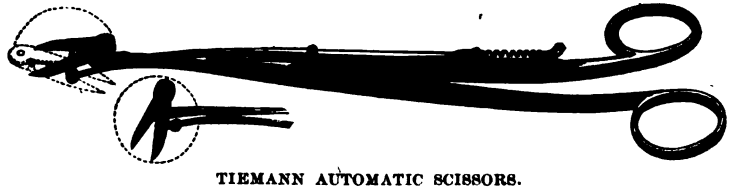
be made in one direction only, that is to say, any set of cuts should not be crossed by other cuts until the former are healed. The bleeding is pretty copious, but may be immediately arrested by pressure with the finger, a layer of wet blotting paper being interposed between the finger and the skin pressed upon. After three or five minutes the bleeding will have ceased, but the blotting paper should be left on for two or three minutes more. It should then, while still wet, be carefully peeled off, and thereupon the quite unstained skin will scarcely exhibit any trace of the operation."

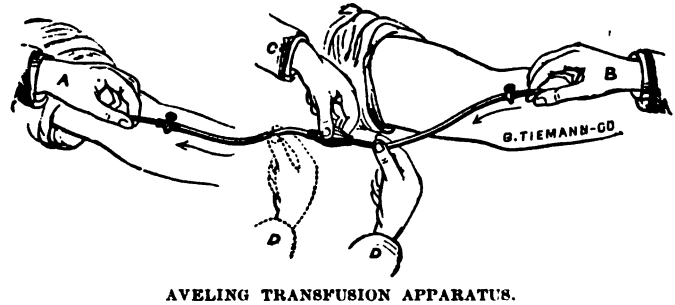
Dr. Noyes has a silver brush holder for the posterior nares.

Dr. Dudley a new Iridictomy Scissors.



TIEMANN AUTOMATIC SCISSORS.

Tiemann & Co., forceps which can be bent in any desirable curve. Also, an Automatic Scissors, rotating in every direction, for use in operations for vesico vaginal fistula.



AVELING TRANSFUSION APPARATUS.

Aveling's Apparatus for Immediate Transfusion is simple and safe to use. It consists of two rubber tubes attached to a rubber ball or bulb, like the Davidson Syringe. To the end of each tube is an aspirator needle with a stop-cock.

Dr. Garringuss' transfusion syringe has but one stop-cock, and does not take the blood directly from the furnishing patient, but from some vessel into which it has first been received.

Dr. Henry Martin, of Boston, has introduced to the profession the rubber bandage, for the treatment of varicose ulcers of the leg. It is highly praised by many.

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Dr. Bartlett, of Chicago, has greatly improved the double stethoscope. It differs from the common instrument in that the trumpet portion, for a considerable distance above the bifurcation, consists of but one piece. The sound is greatly intensified by this arrangement.

The Hypodermic Syringe has received not a little attention during the past two or three years, and it has now reached a high state of perfection. One fault, to my mind, still exists in its construction, which is that the needle is made too small. The introduction into the skin of a needle twice the size of that ordinarily used would cause no more pain, and would certainly be far more effective to use, for who has not had his patience many times tried, by the failure of his syringe to work, on account of obstructions occurring in the infinitesimal caliber of his needle.

I am fully aware that I have not, in this report, given a description of every important new instrument and improved old one that has been attempted to be brought to the notice of the profession during the past three years, for I believe the number, including both this country and Europe, would reach one thousand, but I think I have already sufficiently taxed the patience of the Society.

I am greatly indebted to Geo. Tiemann & Co., of New York, for the loan of the many electrotypes which illustrate this paper.

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ARTICLE IV.

PSOAS OR LUMBAR ABSCESS.

BY D. LA COUNT, M. D., OF CHILTON, MEMBER OF THE COMMITTEE ON SURGERY.

It being incumbent on me to furnish on this occasion some report appertaining to surgery in some of its branches, I have selected that of Psoas or Lumbar Abscess; not with the idea that I can throw much new light upon this subject, but from the fact that a faithful report of the cases which have come under my charge during my time of practice may prove of value to the profession.

Psoas or lumbar abscesses, as I am led to understand them, are, respectively: When the accumulated pus proceeds in an anterior and downward direction in front of the psoas muscle, it is styled a Psoas Abscess; while the pus proceeding backwards towards the loins forms a Lumbar Abscess,—a nominal distinction, which, being topographically correct, does not necessarily imply any difference in the nature of the two affections, inasmuch as observation has proved them to be perfectly identical in character.

CASE 1.—In the month of August, 1860, I was called to see Mrs. W., aged 24 years, a healthy and robust woman, six months advanced in pregnancy. She was attacked with severe pain in right lumbar region, followed by a severe chill and very high fever. The pain was subdued by opiates and warm fomentations applied to the part, and during the fourth week of my attendance I placed the patient under the influence of chloroform and opened the abscess. The discharge was very abundant, and the pus of a healthy character. The pain ceased immediately upon opening the abscess. It was washed out twice a day with a weak solution of liquor sodæ chlorinatæ, and it continued to discharge for four months, and at the end of that time the discharge ceased entirely. The disease was complicated by a premature delivery of a still-born child six weeks after the commencement of the disease. Convalescence in this case was very protracted, but she had perfectly recovered at the end of eight months, and now lives in Minnesota, enjoying good health. The internal treatment was quinine, iron, and the mineral acids, with a generous diet.

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CASE 2.—Mr. F., age 36, a healthy, robust man, was attacked in September, 1864, while loading some bags of wheat into a wagon, with severe pain in the right lumbar region, followed by a severe chill and fever, attended with delirium. Opiates were given in sufficient doses to subdue the pain, and hot fomentations applied to the painful region, and at the end of three weeks from the commencement of the attack, I administered an anæsthetic and laid open the abscess. The discharge was very profuse, and a fœtid gas also escaped. The abscess was washed out morning and evening with a solution of liquor sodæ chlorinatæ for three or four weeks; afterwards once a day until the abscess was entirely healed, which was eight months from the time it was opened. The patient became very much emaciated, the lower extremities were œdematous, and all the symptoms of dissolution were present; but by the aid of quinine, cod-liver oil, iron and nourishing diet he finally recovered, and is now living and enjoying as good health as he did before the attack of the disease.

CASE 3.—In April, 1867, I was called to attend a Mr. Peck, aged 45 years, who had been attended by an irregular (whose diagnosis was rheumatism) for eight weeks previous to that time. I found the patient very much emaciated and suffering great pain. Upon making an examination of the case, I found what proved to be an abscess extending towards the right groin. I administered chloroform and laid the abscess open just above Poupart's ligament, and external to the iliac vessels. There was a profuse discharge of pus and fœtid gas. The abscess was washed out morning and evening with a solution of liquor sodæ chlorinatæ; internally he was given quinine, iron and alcoholic stimulants, but to no purpose. The patient gradually grew worse, and at the end of three or four weeks died. An autopsy made twelve hours after death revealed the fact that the abscess was associated with necrosis of the lumbar vertebræ. The pus had formed and had taken a direction downwards and in front of the psoas muscle, and made its appearance just above Poupart's ligament. By making inquiry, I found that the patient had experienced some slight pain and uneasiness in the right loin for eight months previous to his death.

CASE 4.—Mr. H., age 21 years, was attacked about the middle of September, 1872, with pain in the right lumbar region, attended with considerable fever and loss of appetite; bowels constipated. I was called on the 17th day of November, and up to that time he had been attended by an irregular, who diagnosed the case liver complaint, in strict accordance with the custom of that class of individuals, who heap upon that unfortunate organ the causes of all diseases that human flesh is heir to. I administered chloroform and opened the abscess three inches to the

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right of the spine and just above the ilium. The discharge was very abundant, attended with an escape of fœtid gas, the pus being laudable in character. The abscess was washed out morning and evening, with a solution of liquor sodæ chlorinatæ; internal treatment, quinine, iron and cod-liver oil, with nourishing diet. The patient made a good recovery. The abscess closed perfectly in six weeks from the time it was opened, and at the end of two months the patient returned to his labor—making railroad ties. It is my opinion that this attack was brought on by carrying railroad ties on his back out of a swamp. The fact that he was thus attacked after a hard day's labor of this kind leads me to believe that the cause was traumatic.

Case 5.—Hedd, age 28 years, was attacked in the spring of 1875 with severe pain in the right lumbar region, attended with high fever and loss of appetite, and constipation of the bowels. I was called on the 15th day of May, 1875. Upon examination I found a circumscribed swelling with distinct fluctuation, situated in the right lumbar region. I administered chloroform and opened the abscess. A profuse discharge of pus took place, also fœtid gas escaped. The pus was laudable in character. The abscess was washed out morning and evening with a five-per-cent. solution of carbolic acid. It continued to discharge for six weeks, then gradually closed, and the patient returned to his labor, which was farming. The internal treatment in this case was quinine, iron and cod-liver oil, with nourishing diet. This patient was also a robust, healthy man, who had never been sick, nor had he any predisposition to scrofula.

Case 6.—Mr. H., age 48, a tailor by trade, was attacked in January, 1876, with slight pain in the right lumbar region, which did not entirely incapacitate him for labor on the bench. But soon accompanying the pain was loss of appetite, marked emaciation, hectic fever, profuse sweats. He had also a cough, attended with muco-purulent expectoration. He consulted several physicians, but they all disagreed in their diagnoses. I was called to see the patient on the 16th day of April, 1876. He could not assume the erect posture, and was suffering some pain in the right lumbar region, extending to the groin of the same side. In my examination I found a circumscribed swelling with distinct fluctuation. I administered an anæsthetic and opened the abscess just above Poupart's ligament, and external to the iliac vessels. The discharge was very abundant. The pus had a sanious character; the gases that escaped were very offensive, and one might be led to believe that there was an opening into the bowels, from the fetid odor emanating therefrom. The abscess was washed out morning and evening with a five-per-cent solution of carbolic

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acid; internal treatment, quinine, iron, and alcoholic stimulants—all to no purpose; the patient continued to sink, and died on the first day of May, 1876. An autopsy made twelve hours after death, revealed the fact that the lower lumbar vertebræ were necrosed, and the pus had taken a direction downwards and in front of the psoas muscle, and pointing just above Poupart's ligament. The lungs were, especially in their upper lobes, studded with tubercular deposits, and in the apex of the right there was a cavity of considerable size. The heart, liver, stomach, kidneys and bladder were in a healthy state.

Case 7.—Mrs. S., 32 years old, seven months advanced in pregnancy, was attacked with pain in the back (supposed by her to be rheumatism), followed by some fever, loss of appetite, and constipation of the bowels. These symptoms steadily increased in severity until I was called, on the 30th day of November, 1878. I found the patient very much emaciated, with loss of appetite, colliquative diarrhœa, profuse sweats, with inability to use the right lower extremity. Upon examination, I found a circumscribed swelling situated to the right of the spine, just above the crest of the ilium. Fluctuation was well marked, and I proceeded to administer ether and opened the abscess. The discharge was profuse, composed of pus streaked with blood, and considerable gas escaped, which was very offensive. The abscess was washed out with a solution of carbolic acid, morning and evening, and carbolized cotton covered with oiled silk, applied. Internal treatment consisted of quinine, iron and alcoholic stimulants with nourishing diet. The patient commenced improving; her pains ceased; the appetite returned. The abscess continued to discharge for three or four weeks, when the discharge gradually grew less and less, until the abscess closed and the patient is now enjoying her usual health. At the end of her term of gestation she was delivered of a healthy child.

The foregoing cases have been reported by me, not because they are new to any of us, nor because the treatment pursued presents any new features not found in the text-books, but for the reason that the cases reported seem to be at variance with the statements of that large class of medical writers who claim abscess of the kind now under consideration to be essentially a strumous disease, and that they only occur in persons of a strumous predisposition, and who also claim that the prognosis is generally unfavorable, most patients perishing from its effects in from twelve to fourteen months. It has also been a matter of observation by me in my study of these cases, that authors seldom, if ever, discriminate between the acute and chronic psoas abscess. The symptoms certainly

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differ widely. In the acute cases the symptoms are exceedingly active and marked, while in the chronic they are noticeably passive. It will be noticed, in reviewing the cases which terminated fatally, that the symptoms differed materially from the five cases that terminated favorably, the fatal cases being much more passive in their character. In the other five cases the symptoms were very active, the disease being ushered in by a severe chill, followed by a high grade of fever, with excruciating pain in the loin, loss of appetite, constipation and thirst. In the cases terminating fatally, the disease advanced very insidiously, the first symptom complained of by the patient being a slight uneasiness in the loin, loss of appetite, weakness and emaciation, the patient not being aware that he was struggling with so deadly a foe.

It may also be remarked in each of these cases that the location of the disease was on the right of the spine. All the cases I have ever seen were situated as above stated.

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ARTICLE V.

REPORT ON DIPHTHERIA.

BY S. L. MARSTON, M. D., OF CAMPBELLSPORT, CHAIRMAN OF THE COMMITTEE ON PRACTICE.

With the view of obtaining information in regard to the character of disease in special localities, and the gathering of such facts relating to the etiology and treatment of the more important diseases that might prevail in the state during the year just closed, and embodying them in a report, a circular was addressed to four hundred practicing physicians of the state. In replying to this circular, a few have answered all the more important interrogatories, but not a sufficient number to enable me to carry out my plan; many, however, responded to my special request, and have given me their views as to the nature, cause, and treatment of diphtheria. The different opinions expressed as to the nature of the disease, and different modes of treatment practiced, together with the fact of the frequent occurrence of *solitary* cases, as well as epidemic outbreaks of the disease in different localities of the state, and the heavy death rate that attends it, have induced me to select diphtheria as the subject of a report. I emphasize the word *report*, for I would regard it, to say the least, as out of place for me to occupy your time in endeavoring to present a regular essay upon this subject. This should only be attempted by gentlemen who have more and better opportunities for special study and investigation than is allotted to the busy general practitioner; and not even by them, unless they have something better to present than theories which "snare the unwary," and soon "become exhausted in empty dreams."

The third annual report of the State Board of Health shows that diphtheria appeared during the year ending May 31, 1878, in two hundred and twenty-six localities in the state; that there occurred during the year three thousand, three hundred and twenty-four cases, and six hundred and eighteen deaths; ratio of mortality, 1 to 5.3+, or eighteen per cent. This does not include the city of Milwaukee, and includes reports from only about two-thirds of the towns of the state.

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The annual report of the Commissioner of Health of the city of Milwaukee for the year ending December 31, 1878, shows that three hundred and eighty-nine cases occurred in that city during the year, and that one hundred and three cases terminated fatally; ratio of mortality, 1 to 3.7+, or 26 per cent. This, as compared with the preceding year, 1877, shows a decrease of twenty-six in the number of cases, but an increase of four fatal cases, and two per cent. in the ratio of mortality. The reporter says: "When the Health Commissioner took charge of the department at the close of April last, there was not a striking amount of diphtheria in the city. The disease was nearly in abeyance during the hot months of summer. Early in the autumn it showed itself with fresh vigor, and soon threatened to become epidemic." In a few localities in the state the disease has recently prevailed endemically, or as an accumulation of sporadic cases, but in most cases it has appeared sporadically, and has only been propagated by infection or contagion.

Dr. B. F. Dodson says of the disease, as it has appeared in the city of of Berlin and vicinity: "Diphtheria remains with us, is seldom absent for many weeks, but usually of a mild form, scarcely deserving to be called more than follicular pharyngitis; and yet, the unmistakable false membrane and occasional serious results make us hold to the name."

The mild form of the disease referred to by Dr. Dodson, belongs to the class of cases described by Oertel as "catarrhal," which generally recover spontaneously and without any medical interference. It is with this class of cases that charlatans acquire the reputation of treating the disease with wonderful success. The chief importance, however, attached to them is that they move about as with an "ambulant typhoid," and may convey the specific noxa for the development of the worst forms of diphtheria, if there be a peculiar disposition to such.

Dr. D. S. Brainard, of St. Cloud, Fond du Lac county, after noticing and excluding a class of mild cases that in his opinion hardly deserved the name of diphtheria, described the disease as it appeared in that locality during the winter of 1878–79, as not being as malignant in character as often seen, but of a moderately severe form, with occasional cases of diphtheritic croup, which invariably terminated fatally. The ratio of mortality in Dr. Brainard's practice was one to seven, obstructive laryngitis being the only cause of death.

Dr. H. D. Hardacker, of Hortonville, in reporting the outbreak of diphtheria at Mendina, a neighboring village, says "that it only lasted about two weeks during the month of November, 1878; that many of the cases were malignant, and that the ratio of mortality was 1 to 2.5, or 40 per cent. Drs. E. L. Griffin of Fond du Lac, J. C. Hall of Monroe, G.

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Northrup of Marquette, and L. Eidemuller of New Cassel, also mention malignant cases as having occurred in their practice during the past year.

From the difference in the ratio of mortality, and such other facts as I have been able to gather having a bearing upon the question, I am led to conclude that for the last twelve months the disease has generally appeared in a milder form, and that malignant cases have been less frequent in the country towns and villages than in the city of Milwaukee. Has this been accidental, or the result of the anti-hygienic conditions that more frequently obtain in cities? In considering this question we should recognize the fact that, notwithstanding the greatly improved sanitary condition of the city, the ratio of mortality of 1878 exceeded that of 1877 two per cent., while the extraordinary precautions taken by the Health Commissioner, Dr. O. W. Wight, in placarding houses, isolating cases, and thorough disinfection, evidently had the effect of preventing the spread of the disease, the number of cases occurring in 1877 exceeding the number of cases of 1878 twenty-four.

It is generally admitted that anti-hygienic conditions play an important part in the development and spread of zymotic diseases, but we cannot overlook the fact that diphtheria occasionally makes its appearance where apparently the best possible sanitary conditions obtain. Families that live under the most favorable circumstances are not spared; robust children who enjoy the best of care and nourishment are seized and carried off by the disease, although the number of such cases does not reach that attained in other classes in which poverty and uncleanliness favor the spreading of pestilence. "The social relations," says Oertel, "in so far as we consider under that name the different conditions of domestic life, the industrial pursuits, as well as the resulting individual physical state of health, and any other cognate influences which are likely to prejudice the health in general, seem to exert a definite influence in occasioning an outbreak of diphtheria and favoring its spread," while an aggregation of cases and the influence of poisonous miasms undoubtedly increased its virulence." This statement of Oertel's is fully in accord with the observations of most practitioners, though perhaps not always apparent in all localities, and in every epidemic of the disease. Dr. Hardacker, in describing the outbreak of diphtheria that occurred in Hortonville during the fall of 1878, writes that "after a careful review of the peculiarities of the epidemic that it has been my lot to combat, I am fully persuaded that the cause of the disease is a miasm augmented by local causes or some peculiarity of the system as invariable as the miasm itself, and not necessarily what would be called anti-hygienic; the ill-fed and ill-clothed and generally uncared-for children have as generally

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escaped the disease or come through an attack as fortunately as any other. With this experience," says Dr. Hardacker, "I cannot subscribe to the belief that the therapeutist can sit idly by and rebuke the sanitarian."

Dr. H. P. Wenzel, of Lomira, Dodge county, reaches the following conclusions as the result of his observations of diphtheria: "1st. Diphtheria may be generated by filth *plus* a substance in the atmosphere at present unknown. 2d. Diphtheria is infectious and contagious under certain conditions, and may be transferred indefinitely. 3d. Filth increases the malignancy of diphtheria. 4th. Malignant cases may succumb before a membrane is developed in the throat. 5th. Isolation and cleanliness mitigate its virulence. 6th. Diphtheria is a constitutional disease, presenting local and general symptoms." In the main, I endorse the conclusions of Dr. Wenzel, but from observation and study of epidemic outbreaks, and many sporadic ones, I conclude that filth only operates to generate diphtheria by predisposing to it; that the special noxa, at certain times wide spread (whether it be a vegetable parasite or chemical poison) will generate the disease, without the agency of filth, wherever the peculiar individual predisposition exists. "Persons who are either anæmic or weakened by previous sickness, or through high living suffer from plethora, or are of a lymphatic temperament, and such as have lost their health through dissipated habits of life, are particularly disposed to diphtheria. It is well known that the rich and cultivated offer a large contingent of victims to the disease." (Oertel.) A peculiarity of the infectious diseases is the fact that they are specific, and it is a well known law in their etiology "that always and under all circumstances a given kind of disease is solely due to a given kind of morbid agent or cause," and though cases frequently arise which we call sporadic and that seem to originate spontaneously, yet it has not been proved that definite combinations of filth can by chemical action or germ production generate the specific poison of diphtheria.

A few assert that the disease is neither infectious nor contagious. Dr. Wm. C. Reiter, of Pittsburg, Pa., in a monograph on diphtheria published in Philadelphia in 1878, positively declares that this specific disease is "neither infectious nor contagious." He arrives at this conclusion from his observations in the epidemics of 1863–4 and 1865, and that of 1877. I might quote from my correspondence and show that this opinion is entertained by a few practitioners in this state, but it is unnecessary. The evidence relied upon by the advocates of this hypothesis is of a negative character, generally. After remarking that in particular epidemics of the disease their observations have led them to conclude that it is neither infectious nor contagious, they refer to the experiments of Trous-

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seau, who vainly endeavored to infect himself and two of his pupils with diphtheritic matter; to Michael Peters, who reports in his inaugural thesis, published in Paris in 1859, three attempts that he made upon himself to test whether or not diphtheritic poison was inoculable, that all proved unsuccessful;* and to Raynal, who failed to inoculate a chicken, using false membrane taken from patients suffering from diphtheria.† Although it may be true that when several members of a family or community are successively attacked with diphtheria it may be induced by the prevailing miasm, yet numerous well known facts incontestably prove the contagious character of the disease. Careful observers have frequently noticed cases where infection took place by the act of kissing.

From Dr. J. T. Reeve, secretary of the State Board of Health, I learn that the instances of its spread by close contact have been numerous in this state during the last two years; also of its spread by public funeral services. Infection by contact chiefly takes place in this way: "the patient coughs what has collected in his throat into the mouth or nose of the examining physician, or, as it more commonly occurs, it is brought about by inflating the lungs, or clearing a tracheotomy tube by suction, in cases of tracheotomy for asphyxia. In this way Otto Weber, Seehusen, Valleux, Blache, Gillite, fell sacrifices to their professional devotion."—Oertel.

That diphtheria is inoculable is shown by the positive results attained by Trendelenburg, Oertel, Hueter, Thommasi, Nassiloff, Ebert and Satterthwaite. Trendelenburg‡ reports sixty-eight experiments made by himself, in which he succeeded in transmitting the disease by inoculating the inner surface of the trachea of rabbits and birds with fragments of false membrane taken from children attacked with diphtheria. Oertel‖ has made known the results of his experiments in the same direction. He says that "in Trendelenburg's and my experiments not only did a membrane form in the trachea, but there was also an infection of the blood and acute disease of the kidneys, followed by death on the third day." Inoculations on the muscles were made by Hueter, Thommasi and Oertel; on the cornea by Nassiloff and Ebert with positive success. Satterthwaite§ affirms that he has frequently observed fatal results from inoculating the muscles with either an aqueous infusion or with the solid diphtheritic matter. He has also noticed equally fatal results where the membrane had been previously boiled, made into paste with a strong solution of salicylic acid combined with phosphate of sodium, as a

* Dict. de Med., en 3 vol. X, p. 393.
† Dict. de Sciences Veterinaires, par Boulay et Rayuard, vol. I, p. 605.
‡ Archiv fuer clinische Chirurgie, 1869.
‖ Ziemssen's Cycl. of the Practice of Med., Vol. I, p. 585.
§ Ziemssen's Cycl. of the Practice of Med., Vol. I, p. 585.

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solvent, and inoculated in the thighs of rabbits, death generally occurring about the end of the second day.* Positive evidence of this character, taken in connection with the many well known cases (some of which have already been alluded to) of infection of the human organism by contact, fully justifies the conclusion "that diphtheria is really an inoculable disease, and nearly if not quite as certain to be transmitted in this manner as variola and syphilis; consequently it is true that when there is immediate contact between the products of diphtheritic inflammation and a softened mucous membrane or denuded skin, contagion will almost inevitably take place." (Beverly Robinson.)†

It may be said that the pathogenesis of diphtheria is still a mystery. The question of how the poison acts and calls forth symptoms, as well as the collateral questions as to whether the poison be a vegetable germ, a chemical substance, or bioplasm, remain unanswered. Recently it has been held that diphtheria has a special microphyte, or minute microscopic plant as its peculiar active principle. A cryptogamous organism was described by Tigui in a memoir to the French Academy of Medicine, as a branching parasite that entered into the structure of the diphtheritic false membrane, and which he believed to be the infecting agent and direct cause of the disease.

Litzerich‡ has also described a fungus which he found in the diphtheritic membrane and in the urine of patients suffering from the disease, which he regards as the specific poison, and to which he has given the name Tilletia diphtherica.

Oertel§ announced in 1868 that he had discovered in the diphtheritic membrane, the subjacent diseased parts, and the blood of infected persons, great numbers of vegetable organisms or bacteria, to which he gave the name micrococci. Hueter discovered these organisms simultaneously with Oertel, but called them monades.

Oertel, in his treatise on diphtheria, published in Ziemssen's Cyclopædia, writes that "there can no longer be a doubt that these vegetable organisms are not of accidental occurrence, but are inseparable from the diphtheritic process, just as the bacteria of decomposition are necessarily connected with decay and act as a ferment of it. These alleged discoveries and conclusions as to the role played by bacteria in this infectious disease have met with marked opposition. Prof. Jacobi, in a paper published in the American Journal of Obstetrics for February, 1875, entitled, Contributions to the Pathology and Therapeutics of Diphtheria, says that 'the tendency of natural philosophy, and its daughter, medicine, to

*Transactions Inter. Med. Congress, 1876, p. 1028.
†Am. Journ. Obstet., June, 1876.
‡Vichow's Archiv, 1869, and Berliner Klinik, 1868.
§Aertzl. Intelligenzblatt, No. 31, 1868.

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realistic appreciation of natural phenomena, and the apparent facility of explaining some facts which are difficult to understand, have been the cause of the almost general acceptation of this theory, which appears to subvert well-nigh all our experience on the slowness with which, as a rule, all scientific progress is developed. The theory is so enticing, I might say bewitching, that we can hardly help burying everything we knew of pathology and diving headlong into the new fountain of apparently exact knowledge.' * * *

"Nor is this all. We ought not to forget that histologists do not all agree about the nature of the corpuscles claimed as bacteria in almost all infectious diseases. The number of investigators is very large, and good names are counted amongst them. But I, who am not an histologist laden with new discoveries, am aware of the fact that the world-wide reputation of some of these names is based almost absolutely and solely npon bacteria, and that is too narrow a basis. I cannot but warn to be careful in accepting—not facts, but their explanations. The reading with the microscope is relied upon as unimpeachable least by those who are the acknowledged masters in the field. Panum is positive as to the chemical nature of putrid poison; so is Bergmann, and so Verneuil; Billroth has published a series of investigations extending over many years, in his great work on Coccobacteria. The conclusions are not identical with the bacteria theory as defined before. He is more inclined to believe that a chemical poison is the source of infectious disease, but that this may result from the presence and influence of coccobacteria in the blood."

Dr. Satterthwaite, in a paper entitled, The present condition of the evidence concerning "disease germs," read before the section on sanitary science of the International Medical Congress of 1876, after stating that it had long ago been shown by Schwann and others, and more recently by Tyndall, that the air, at times, swarms with bacteria; and that it is also true that bacteria occur in the body in health, the mucous membrane of the alimentary canal, from the mouth to the anus, having been found peopled by myriads of them in active independent motion, says: "As long as this remains true, it is for those who maintain this theory to show that there is a manifest difference between the bacteria which they believe to be disease agents and those that we know are generally to be found in the tissues; for the mere fact that bacteria are found in extraordinary quantity at any one point, does not, by any means, indicate disease. In a large number of experiments performed by Dr. Curtis and myself, it was found that under certain circumstances not incompatible with ordinary good health, vast collections of bacteria were to be found upon the tongue. Under these circumstances, it seems to me perfectly proper to

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believe that bacteria occur in some infectious diseases as correlative products, and not as causes of the disease. I may here venture to state that as far as diphtheria is concerned (and upon this matter I have made some special study) I have never found any organisms connected with the disease that could in any way be distinguished from those found at other times in the body."* It may be said, although three years have elapsed since the paper was written, that the present status of scientific knowledge relating to the nature of the diphtheritic poison, as well as to the active principle of some other infectious diseases, is embodied in the conclusions of the paper by Dr. Satterthwaite, which were adopted, with slight modifications, as the opinion of the section, as follows:

"1st. That so far as inquiry has been made as to the results of the active principles in infectious diseases, it is probable that in a certain number the matter is particulate or molecular in form, and, in the instances named, in no sense a soluble substance.

"2d. That in regard to the causes of septicæmia, pyæmia, puerperal fever, erysipelas, and hospital gangrene, and in cholera, small-pox, the carbuncular diseases of man and animals, of typhoid and relapsing fevers, and diphtheria, there is no satisfactory proof that they are necessarily connected with minute vegetable organisms.

"3d. That the real nature of these causes is still uncertain."

In 1860 Prof. Jacobi wrote as follows: "Diphtheria is a general disease; it has local deposits, it is true, but in the same manner that scarlatina will localize itself on the skin, mucous membrane of the Bellinian canals, etc., measles on the skin and mucous membrane of the respiratory organs, or typhoid fever on the mucous membrane of the intestinal tract."†

On page 668, vol. I, of Ziemssen's Cyclopædia of the Practice of Medicine will be found the following statement by Oertel: "In diphtheria we have to deal at first with an infection which is localized, and afterwards with a genuine disease resulting from this, out of which may ultimately be developed still a later affection of various organs."

These quotations from these distinguished authors present two prevailing theories relating to the pathology of diphtheria, and it is of immense importance that we ascertain (if possible) which of these theories is true, as our practice will necessarily be influenced by the theory we adopt. Is the opinion correct that the primary event is a poisoning of the blood, that the disease is at first general or constitu-

*Report Board of Health N. Y. City, 1877—Report on Pathology of Diphtheria.
†American Med. Times, Vol. I, p. 95.

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tional, and that the affections of the mucous membrane are merely secondary localizations, or is it true "that the poison is received upon an exposed surface where it excites inflammation, and that the blood either escapes contamination or receives the poison by absorption or penetration from the inflamed surface"?

The limits of this report will not permit of our considering these questions at length, but as the treatise of Oertel, published in Ziemssen's Cyclopædia, is to be found in the libraries of physicians, and as it teaches the bacterian theory, and that diphtheria is primarily a local affection, I will present some of the conclusions of those who regard it as a constitutional disease with local manifestations.

Experiments on the lower animals have thus far failed to demonstrate the primary nature of diphtheria as it occurs in the human race, and well authenticated cases of accidental inoculation of the human subject through wounds of the skin (where other sources of infection have been excluded) are not frequent. Hillier relates the case of an eminent English surgeon who performed tracheotomy on a child supposed to have croup, and punctured his thumb. The puncture was painful on the following day, and a pustule occupied its site. This was opened and poulticed. "A day or two later, on removing the epidermis, the subjacent cutis was found in the condition of a peculiar dark slough; there was an entire absence of suppuration and excessive pain. This was followed in six days by a diphtheritic deposit on the tonsils; the wound on the thumb was long in healing." A month later diphtheritic paralysis occurred.* It is very probable that in this case the poison was received through the punctured wound on the thumb, and that constitutional disease was set up before the pharyngeal inflammation occurred, and the case is evidence that in whatever way the poison may gain admission to the system, it is especially attracted in the human subject to the fauces and contiguous parts.

"But," says Dr. J. Lewis Smith, "if we could obtain no further light in reference to the primary nature of diphtheria than what is afforded by experiments on animals and accidental inoculations on man, we would probably never know, when called at the commencement of a case contracted in the usual manner, whether we had to treat a merely local affection or a constitutional disease with local manifestations."†

The latent course of diphtheria, as is well known, ordinarily occupies from two to five days, but cases are not infrequent in which the period of incubation has been shown to be an entire week. "Now, according to the doctrine that diphtheria is at first local and that the inflammation results

*Hillier, Diseases of Children.
†Transactions Internat. Med. Congress, 1876, p. 344.

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from the irritating effect of the virus which lodges upon the mucous membrane, this virus must remain inactive a week upon the surface where it is received. Such inactivity in a poison of unusual energy and malignity, would be very improbable; but we have sufficient explanation of the long incubation, if, in whatever way the poison is received, it first enters the blood and the inflammation occurs subsequently to the blood changes. It is a law in pathology that these specific diseases which have an incubation of several days are constitutional." (J. Lewis Smith.)*

The wide field of clinical experience furnishes a series of facts which, taken collectively, afford strong corroboration of the theory that there is primary systemic infection in diphtheria, as it is ordinarily contracted. Dr. J. Lewis Smith states them as follows: "1st. The long incubative stage in certain cases. 2d. The occurrence of severe constitutional symptoms for a longer or shorter time—perhaps for half a day before the appearance of the usual inflammation. 3d. The quick succumbing of the system in certain malignant cases, evidently due to diphtheritic toxæmia.† 4th. The state of the kidneys. No internal organs are so often affected in diphtheria as the kidneys, and, on account of their location and anatomical relations, it is evident that the poison first passes through the system before it reaches them. Any clinical or anatomical fact, therefore, which indicates that the diphtheria virus has reached and affected the kidneys, affords proof that it has penetrated the system and poisoned the blood. Now, the occurrence of albumen with granular or hyaline casts, in the urine, affords proof of nephritis caused by the action of the poison on the kidneys. Dr. West, from observations made in London, believes that albuminuria is commonly present in diphtheria, but the frequency of the occurrence varies in different epidemics according to the severity of the type."‡ Sir John Rose Cormack§ states that albuminuria, and of course the nephritis upon which it is dependent, sometimes begin as early as the first day. One more clinical fact which is often observed may be cited in support of the opinion that diphtheria is primarily constitutional, and that the inflammations are secondary and dependent on the blood poisoning. It is this: "When the inflammation of the mucous surfaces has apparently ceased, or only slight catarrhal inflammation remains, and the apartment in which the patient has been treated has been thoroughly disinfected, and local treatment discontinued, we are, perhaps, surprised to observe the reappearance of the diphtheritic pellicle, though less in extent and with less severe symp-

*Transactions Internat. Med. Congress. 1876, p. 344.

† A case of this kind which terminated fatally on the second day, and while the diphtheritic inflammation which appeared on the tonsils was still in its incipiency, recently occurred in the practice of Dr. L. Eidemiller, of New Cassel.

‡ Transactions Internat. Med. Cong. 1876, p. 345.

§ Edinburgh Med. Journal, 1876.

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toms than at first. It is highly improbable that diphtheria has been contracted a second time. The rational explanation is that the reappearance of the inflammation is due to the fact that the blood is still infected, that, as when syphilitic eruptions re-appear, it is not yet purified of its noxious elements. I have seen this return of the diphtheritic pellicle even in mild cases, in which there was no other evidence of general disease. If the second occurrence of the inflammation is due to the poisoned state of the blood, is it not probable that the first inflammation is also thus produced?" * (J. Lewis Smith.)

I have perhaps occupied too much space in attempting to show that diphtheria is primarily a constitutional malady, but from a careful examination of the literature of the disease, published within the last year, and from my correspondence, I find that the discrepancy of treatment which exists results in a large degree from the wide difference of opinions as to the nature of the disease and its mode of commencement. Physicians who accept the theory of its parasitic nature, and believe the disease to be primarily local, regard early local treatment as of paramount importance, and recommend as curative the topical applications of antiseptic drugs in weaker or stronger solutions. The following is an example of this kind of practice: Dr. J. N. Garnett, in an article in the American Journal of Medical Science, April, 1879, entitled Treatment of Diphtheria by Carbolic Acid and Iodoform, says: "The principle underlying the treatment is the destruction of the false membrane by the careful application of a caustic solution of carbolic acid in glycerine, and rapidly subduing the œdema by lightly brushing over all the swollen parts with the same remedy, followed by the direct application of Iodoform to any abraded or ulcerated spots to heal the broken surface, to act as an antiseptic, and to allay the pain, irritability, and extreme sensitiveness of the diphtheritic inflammation. The carbolic acid should be applied with a camel's-hair pencil, under the light of a mirror. The strength of this solution should be proportioned to the thickness of the false membrane; the object being its complete destruction and removal. In cases seen early, a solution of equal parts of carbolic acid and glycerine will answer well."

Medical men who admit that blood-poisoning precedes local diphtheritic inflammation, but acknowledge the direct agency of the lower forms of organized life in developing the disease, regard applications as of little importance, and commence treatment by administering, in appropriate doses, disinfectants. Dr. W. W. Carpenter is a fair representative of this class of practitioners. He says (I quote from the Med. Brief for May, 1869): "That it is a constitutional disease—a primary blood-poison

*Transactions Internat. Med. Congress, 1876, p. 348.

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—I think all competent observers are agreed," and "that is of cryptogamic origin I, at least, am perfectly satisfied. After an extensive and thorough experience with all the remedies that medical thought and wisdom have offered, I have settled to the conviction that the philosophical remedy is that which will quickest and surest destroy cryptogamic, infusorial, vegetative growth or life, and that is sulphurous acid." He says that "caustics, and in fact all topical applications, except that made by the medicine during the act of swallowing, are simply absurd."

In regard to the first therapeutic creed, I will only remark that should it be proved that the primary event in the disease is a blood-poisoning, and that the local diphtheritic inflammations are but a consequence of blood changes already produced, local treatment with the view of arresting its progress would be, to say the least, irrational.

In regard to the second plan of treatment it may be said that, while we can congratulate ourselves on our ability to increase to some extent the power of resistance of the blood to the action of poisons that may have been absorbed into it, we have no proof (so far as infectious diseases are concerned) that our remedies act by destroying the poison itself. Our positive knowledge in regard to the disinfection of accessible, putrid fluids with antiseptic drugs, and of the quantity required in a given amount of fluid to destroy *vegetable germs*, raises the question: Is it possible to administer them through the alimentary canal in sufficiently large doses to destroy cryptogamic vegetative growths (bacteria) or to prevent their production in every tissue and liquid of the body, without arresting inocular action and occasioning death? Let us consider the problem. The weight of the blood, in proportion to the weight of the body, is, we are aware, as one to eight; and the body of a healthy man, weighing 145 pounds, will therefore contain, on the average, about eighteen pounds of blood.* Now, in administering antiseptic drugs in anything like the proportions necessary "to interfere notably with the vitality of microzymes" in this large quantity of circulating fluid, we must certainly eliminate such medicines as sulphurous acid, the sulphites, hyposulphites, the sulphocarbolates of soda and potash, carbolic and salycilic acids, and the permanganate of potash. But even though it were possible to introduce them into the blood without incurring risk, in such quantities as would prevent that fluid from becoming the abode of bacteria, the probability is that it would neither prevent nor cure diphtheria.

The experiments of Satterthwaite, already mentioned, have shown that the true poison of diphtheria remains unaltered by the action of salicylic acid (an excellent preservative and antimicrophytic) even though lower

*Dalton's Physiology, p. 224.

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organisms are destroyed and the power taken away by which their reproduction is effected.

The following conclusions by Dr. J. Lewis Smith* are a most exact expression of our own views, and inasmuch as they inculcate therapeutic principles that have been amply vindicated by experience, we present them in full. "I am persuaded," says Dr. Smith, "that in order to secure the best treatment, constitutional and local, of diphtheria, it is necessary that the physician should accept the following propositions:

"1st. The specific principle of diphtheria in all probability enters the blood, in ordinary cases, through the lungs, and after an incubative period which varies from a few hours to seven or eight days, produces the symptoms which characterize the disease.

"2d. Facts justify the belief that the system can be protected by antiseptic or preservative medicines administered internally. A quantity of this kind of medicine introduced into the system, sufficient to preserve the blood from the diphtheritic virus, would, there is every reason to think, be so large as to arrest molecular action, and therefore the functions of organs, and occasion death.

"3d. There is no known antidote for diptheria in the sense in which quinia is an antidote for malarial disease, and no more probability that such an antidote will be discovered than for scarlet fever or typhoid fever.

"4th. Diphtheria, like erysipelas, has no fixed duration; it may cease in two or three days or continue so many weeks, but the specific poison acts with more intensity in the commencement than subsequently, and its energy gradually abates. Hence a diphtheritic inflammation, which arises in the beginning of diphtheria, as laryngitis, is more severe and dangerous than when the malady has continued a few days.

"The indication for treatment is to sustain the patient by the most nutritious diet, by tonics and stimulants; and to employ other measures, general and local, as adjuvants to meet special indications that may arise. The rules of treatment appropriate for scarlet fever apply for the most part to diphtheria. Local treatment of the inflammation should be unirritating and designed to prevent putrefactive changes and septic poisoning. Irritating applications which produce pain lasting more than a few minutes, or which increase the area or degree of redness, are apt to do harm and increase the extent and thickness of the pseudo membrane."

*Am. Journ. Med. Sciences, Oct., 1877.

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ARTICLE VI.

EPIDEMIC INFLUENZA.

BY E. L. GRIFFIN, M. D., OF FOND DU LAC.

The wave of an epidemic Influenza, or catarrhal fever, which, during the months of December, 1878, and January, February and March, 1879, swept from east to west over so large a belt of this country, was very manifest in this state. It first attracted the notice of the writer about the middle of January, revealing itself in a few well marked cases, the number steadily multiplying during the following six or eight weeks. The course of the disease was marked by such lesions of function, and took on such an unusual form of expression in many cases, as to challenge the most careful and patient observation to discover the true nature of the malady. While in this locality the number of those who suffered from it may not have been as large as in the history of some former epidemics, yet it numbered very many victims. Persons of all ages and of different social positions suffered from it.

No recognized atmospheric conditions of temperature or humidity, that were peculiar, were noticed as present at the time of the invasion of this disease. It revealed its presence by a variety of symptoms; sometimes in the form of a coryza or common cold; sometimes by a sudden explosion of violent and well pronounced symptoms. Many were slightly affected, while others were profoundly impressed and expressed themselves as being "sick through and through."

Well pronounced chills were experienced in many cases at the onset of the disease, while the *tendency* to chill, with alternate hot flushes of heat, would be present for many days. There was an accelerated pulse, an increased temperature, and an early *conscious weakness and nervous prostration* accompanied with severe headache, and an intolerable pain in the loins, lower extremities, shoulders, and back of head and neck. One patient suffered severely for several days from rigidity of the muscles of the neck; and an elderly gentleman experienced an exalted sensitiveness of the scalp, rendering the slightest touch both disagreeable and painful. In some cases there was a sore throat, with dryness of the

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fauces, and inspection generally revealed a congested and red mucous surface, with one or both tonsils swollen. When catarrhal symptoms were prominent the secretions were characteristic; at first thin and watery, then glairy and tenacious, and at a later stage of the disease thick and moderately profuse. It was observed that the sputa was never so abundant as the cough and the moist rahles in the chest would indicate. In many cases the catarrhal symptoms were very slight, while the constitutional disturbance was quite marked. Generally some part of the mucous surface, either in the respiratory or digestive tract, was sufficiently involved to attract attention. In some cases the catarrhal symptoms were sufficiently pronounced in the onset of the disease to give indications of the nature of the ailment, but were soon marked by the more declared affection of the mucous surface of the stomach and bowels. In such cases the stools were loose, dark-colored, sometimes mixed with mucus, and always very offensive. Abdominal pain was sometimes quite severe, requiring active medication. It was found that mild cathartics were seldom needful, and active purgation always harmful. The urine was generally scanty, high colored, and always loaded with amorphous deposits.

The focal point of danger was always in the lungs. In extreme cases the whole bronchial surface became involved, producing great asthmatic embarrassment in the respiration. In some instances the cough was so spasmodic and violent as to be declared to be the whooping-cough. The pulmonary structure sometimes became involved, giving rise to slightly bloody sputa. In the case of a few aged and feeble persons, and also of some young children, active pneumonia supervened, which generally proved fatal. The fatal cases noted were double pneumonia; verifying the observation of others, that where pneumonia supervened upon influenza, at least fifty per cent. were double. One adult experienced in the later stages of the disease, for some days, a troublesome noise in the head, like that of a distant waterfall. This could in no way be attributed to the effects of quinine or any other medication. Muscular weakness, together with great nervous prostration, were marked features of the disease, and this was often out of proportion to the severity or mildness of the other symptoms, and often continued for some time after the recovery was well established.

The duration of the disease varied in many cases. Some quite severe cases recovered early, while others were protracted through four, six, and even eight weeks. The cough, after having continued for weeks, apparently uncontrollable by remedies, often suddenly ceased,— sometimes greatly to the surprise of the patient. Sharp and sudden relapses were not uncommon, even after the patients considered themselves quite well

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from the first attack. The mortality was light in comparison to the large number affected. A few elderly people and some children succumbed to the complications of the disease.

The phenomena attending the presence of this influenza poison were so varied in different cases, and in some respects so unusual, that many persons were found ailing, and the victims of the poison, who had not recognized the nature of their ailment. Especially was this the case when it awakened an old neuralgia or kindled a new one, the true course of which could not be mistaken when considered in connection with other symptoms and the recognized presence of the prevailing epidemic.

The treatment was largely expectant, palliative or domestic, excepting where the severity of the attack or the complications demanded something more active. Quinine was generally found useful in some stage of the disease; Dover's powder at night—and oftener if needed to allay pain and nervous irritation—was beneficial; tincture of chloride of iron in the convalescent stage. Expectorants were of little value, and seldom used. With the aged, stimulants were always indicated.

The disease—a naked outline of which we have given—is one of the most frequent of epidemic maladies which visits the human family. It is perhaps the most *pandemic* of any known malady. Little is known of the disease previous to the tenth century. The epidemics of the thirteenth, fourteenth and fifteenth centuries are described as having been very fatal. More than ninety distinct epidemics of influenza have been described, most of them extending over whole countries, and some of them over several quarters of the globe. In its movement it has generally passed from the east towards the west, or from northeast to southwest, and this fact has given rise to the theory that its primary foci are to be found in the north of Europe or along the sluggish and miasmatic banks of the rivers of India.

"It is a disease of extraordinary rapidity of progress, and as its diffusibility is great, so are its periods of recurrence frequent — those cycles of its visitations which are as yet beyond our comprehension to explain."

Although influenza has been very thoroughly studied in its history, very little is yet positively known of its etiology or exciting causes. Neither *atmospheric conditions* or *local* circumstances have been proven to have any special or general modifying influence over it. The doctrine of its *contagiousness* has at times been stoutly maintained, but ultimately abandoned. Its propagation and diffusion is not determined by human intercourse. Its rapid spread over large areas of country, sometimes sparsely inhabited, and its penetration into the most secluded and unfrequented dwellings and places, are a forcible argument against this theory.

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Zuelzer says: "The *causes* of influenza are completely *sui generis*, and are as unknown to-day as they were centuries ago. The great number of hypotheses is a proof of this.

"The *causation* of the epidemics has most frequently been sought in atmospheric agencies. It has always, and with good reason, been believed that so general a disease could be disseminated only by means of the most general medium—the air."

Early writers attribute the disease to a *putrid* condition of the air; to a *contagium* or *miasm* in the air; to phlogisticated air from volcanic influences; to diminished electricity; to terrestrial magnetism, etc. In later days the cause has been declared to be an altered condition of the *ozone* of the atmosphere. Recent pathologists declare the disease to be a *blood poison*, without giving us any satisfactory solution as to what the morbific agent may be by which the circulating fluid is contaminated. More than a hundred years ago the theory was advanced that the cause of influenza was "an *animated* contagious material," and it has been asserted by Ziemssen that in the epidemic of 1782 it was believed that the air was infected by a living insect. In Vienna the Medical Council expressed itself to this effect, referring the disease to an insect supposed to be swallowed in the waters. We are informed that the philosopher Kant maintained that the commerce between Russia and China had introduced into Europe an insect which gave rise to the influenza. About the year 1865, Biermer called attention to the fact "that the apparent contradictions of rapid diffusion and slow migration, of general extension and local limitation in the history of influenza, would be easy of explanation on the theory of a *living miasm*, which would be capable of being carried onward by the air, but had an independent existence of its own, and would find in certain places conditions more favorable for its development than in others."

In this line of inquiry, the recent investigations of Salisbury of Ohio, and Cutter of Massachusetts would seem to open a rift through which some light may dawn upon the hitherto obscure question of the *cause* of epidemic influenza.

These gentlemen have discovered, by the aid of the microscope, in the mucous secretions of the eyes, the nose, fauces and bronchial tubes, during the progress of an attack of epidemic influenza, *a parasite*, which the former has described under the name of *asthmatos ciliaris*, and which the latter calls *Rhizopods*, and which they recognize as the *cause* of influenza. Their investigations embrace more than twelve hundred cases of the disease. Dr. A. F. Pattee of Boston, and Dr. W. D. Hooper of Virginia have announced that they have discovered the same thing, not being aware of Dr. Salisbury's or of each other's discovery. Dr. G. B.

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Harriman, of Massachusetts, reports that having exposed slides covered with glycerine in an infected district, he has caught forms floating in the air identical with the asthmatos. It is not maintained by these gentlemen that all catarrhs and influenzas are caused by the presence of this peculiar animalculæ organism, but that they have discovered them to be present in so large a number of cases, and have so invariably found that where they disappear from the mucous secretion, being destroyed by self-limitation or by paraciticides, the influenza disappears, that they are forced by the logic of facts to admit them to be the cause of epidemic influenza.

This parasite, as described by Salisbury, consists of a simple sack, armed on one side with cilia, and enclosing one or more large nuclei, and many smaller granules of various sizes. The cilia are in active motion during the great part of the life existence of the animal, and produce most aggravating irritation of the mucous surface they infect. Having once obtained a lodgment upon the mucous surface of the respiratory tract they multiply rapidly. Their presence upon the nasal surface excites intense paroxysms of sneezing, and when lodged upon the larynx, trachea or bronchial mucous surface, they give rise to violent and distressing cough. If they make their way into the smaller bronchi and air cells they cause asthmatic symptoms of a distressing character. The presence of these parasites upon the velum palati causes most painful paroxysms of cough and spasm of the epiglottis, resembling whooping-cough.

In quite a number of cases observed in the late epidemic, these characteristics of the disease were present in a very marked manner. So distressing and spasmodic was the cough in some cases, as I have before noted, the common people declared the sickness to be whooping-cough. Being a victim myself, my personal experience confirms most emphatically the statements just made. Although at the time not having become acquainted with the discoveries of Salisbury and Cutter, I was much interested in the positive proof, from my own experience, of the *local* origin of the disease. The local point of attack was the epiglottis, and for several hours it seemed to me that it could be covered by a split pea. This surface gradually enlarged, and caused such an uncontrollable spasmodic cough and stricture of the larynx as to give me a wakeful and most uncomfortable night. The next morning the vocal chords were involved to such a degree that I could not speak aloud, and by the following night the trachea and bronchia had become so invaded, and the systemic disturbance so pronounced, that I began to realize the condition so often described by others, that of being "sick all through."

The results of the treatment instituted by Salisbury and Cutter, are

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confirmatory of the theory of causation. The remedies used were such as either destroy or retard the reproductiveness of the parasite. The most efficient of these are the inhalation of sulphur fumes; and the carbolic and salycilic acid spray. The internal use of quinine and tincture of chloride of iron, as general tonics, and local paraciticides, was found very useful. The inhalations are recommended to be made quite freely, and as often as every hour or two. These were found to relieve the sufferings of the patient and the spasmodic cough in a surprising manner, and often in a very short time. This fact is regarded as strong proof of the parasitic origin of the disease. If these observations shall be corroborated by further clinical study, another question of intense interest arises, viz., what is the *origin* of these parasites?

Cutter, as we have said, calls them Rhizopods, classing them with the Rhizopodia that are found in the drinking water that is derived from the waters of the great lakes and ponds, also in sea water. According to this observer, these parasites are not found anywhere in nature, excepting in the waters, dung and human secretions.

This question is still an unsolved one, and invites the earnest study of every scientist and student in medicine.

So far, in the study of influenza, incontrovertible testimony has been established to show that there is a parasitic animal found in the secretions of the respiratory tracts of persons suffering from influenza. These parasites are supposed to be the *cause* of the disease. This supposition is rendered probable by the fact that the disease is infectious; that paraciticides destroy the animals, and that when destroyed, the distressing symptoms of the disease are at once greatly or entirely relieved.

This discovery marks another positive step forward into the region of hitherto unknown causes of many diseases, and deserves to be placed side by side with the recent and most pregnant and positive results obtained by Dr. Rock in his study and discovery of the contagious principle of anthrox in cattle; of the analagous researches and discovery of Dr. Klien, of London, into the parasitic origin of the "blue disease," or "hog cholera"; and of Professor Klebs, who has not only discovered the syphilitic germ, but has cultivated it and demonstrated it outside of the human body; and, still more recently, the remarkable discovery of the veteran M. Pastuer, who believes he has discovered and can demonstrate the primary organism which engenders puerperal fever and malignant pustule. All must admit that these discoveries are among the most grand and important that have marked the recent progress of scientific study, and give promise that patient research will yet succeed in dissipating the obscurities which lie around the causation of other important diseases.

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If further researches shall more thoroughly demonstrate that these Rhizopods originate from large bodies of water, which is their normal habitat, and which they inhabit in infinite numbers, and are drank with impunity daily, but that at times they infest the air and pass through it in immensely extended waves, causing acute disease of the respiratory surface upon which they may be implanted, another question of absorbing interest is forced upon us, and one upon the solution of which we may hope to derive some more satisfactory knowledge of that class of diseases now recognized as *filth* diseases, namely: From whence do these parasitic bodies derive their malignancy?

Upon this question, Dr. Wm. Roberts, of Manchester, England, may possibly have made a more rational suggestion than any other man. He says: "If contagia are organisms, they must possess the fundamental tendencies and attributes of all organized things. Among the most important of these attributes is the capacity for 'variation' or 'sporting.' This capacity is an essential link in the theory of evolution, and Darwin brings forth strong grounds for the belief that variation in plants and animals is not the result of chance or caprice, but is the definite effect of definite (though often quite obscure) causes. I see no more difficulty in believing that the *bacillus anthracis* is a sport from the *bacillus subtilis*, than in believing, as all botanists tell us, that the bitter almond is a sport from the sweet almond—the one a bland, innocuous fruit, and the other containing the elements of a deadly poison. Cholera suddenly breaks out in some remote district of India, and spreads from that center over half the globe. In three or four seasons the epidemic dies away and ceases altogether from among men. A few years later it reappears, and spreads again, and disappears as before. Does not this look as if the cholera virus were an occasional sport from some Indian saprophite, which, by variation, has acquired a parasitic habit, and having run countless generations, either dies out or reverts again to its original type?"

Applying this theory to the causation of epidemic influenza, and it would not be a very "wild excursion of hypothesis" to suppose that the *malign asthmatos ciliaries* of Salisbury or *Rhizopods* of Cutter are a sport or variation of the benign Saprophite or Rhizopodia, induced perhaps by a change of habitat from water to air, and which, running through countless generations in a brief time, either dies out or reverts again to its original type.

This is the theory which we believe a great many of the best thinkers and medical observers at the present hour are inclined to adopt, and by following its trail we may, possibly, in the not distant future, arrive at some demonstrable facts which will fully settle that which is now faint and shadowy.

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ARTICLE VII.

REPORT OF THE CHAIRMAN OF THE COMMITTEE ON OBSTETRICS AND GYNÆCOLOGY.

BY J. K. BARTLETT, M. D., OF MILWAUKEE.

FORCEPS.

My purpose is not to discuss the use of this instrument in conditions which are generally admitted to require it. Its value and its just claims as a most important adjuvant in labor I fully and freely concede. Neither shall I touch upon the question of its use in the first stage of labor, with os and cervix only partially dilated; time is wanting, and it is not in such cases that the tendency against which this paper is a protest, is mainly manifested. I can only remark of the high operation, that it is advocated by comparatively few, save in extreme cases. In cases of pelvic contraction even, Dr. Goodell, of Philadelphia, has made an able plea for turning combined with expression, as its more successful substitute. I only desire to add my small influence and testimony to that of many able and conservative obstetricians who have recently written and spoken, to combat the tendency of teachings and views now quite prevalent, and which must have a powerful influence upon the younger members of the profession in inducing the over-frequent and unnecessary use of this instrument.

If those who are thoroughly skilled in its management can use it, when unnecessary, without prejudice to mother or child (which, although claimed, I must be allowed to doubt), it certainly will not answer to make such action a rule for the bulk of the profession, when not essential to the successful issue of labor. There was a time, a little more than a century since, when the forceps was very fashionable, and at that period no woman of position in London desired to be delivered without its aid. This was made the subject of satire by Sterne in his Tristram Shandy, and was carried to such an extent as to lead necessarily to a revulsion of

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opinion. It then fell into general disuse. Gradually, during the past half century, with a better understanding of the mechanism of labor, and improvements in the instrument, the pendulum of obstetric opinion has swung back again past the meridian line, and bids fair soon to reach the extreme limit of its vibration, if it has not already paused at it. The most important argument which has been advanced for this frequent use, is the claim that statistics show a great gain to fœtal life when it is thus employed.

Let us try to ascertain what statistics really do show, when the result of forceps used once in ten or eleven labors, are compared with those in which they have been employed very much less often, or scarcely at all.

To do this I must make as brief an abstract as possible of recent papers, containing a fair and impartial statement of this subject, by several eminent English obstetricians: Dr. A. W. Edis, physician to the British Lying-in Hospital, read a paper before the Obstetrical Society of London, about two years ago, in which he discusses this question, making use of the statistics of Dr. Hamilton, of Falkirk (a small town near Cork), and Dr. Kidd's tables of the Dublin Rotunda Hospital, under the mastership of Dr. George Johnston and his predecessors. His object was to evoke a full expression of opinion from the Fellows present; his point for consideration, What is the highest rate of frequency of application of forceps coincident with the lowest rate of mortality to mother and child; and, although the statistics to which he had referred seemed to point to a very high rate, he expresses his apprehension that there is danger of a return to the once frequent use of the instrument. In the discussion, many members joined. I shall only mention that Dr. Playfair spoke of Dr. Hamilton's results as very remarkable, and on a subsequent occasion, again referred to them, stating that he had before shown that a low rate of forceps operations was associated with high fœtal mortality. These statistics were widely circulated, and their influence increased, by Dr. Playfair's favorable mention of them, and the inferences drawn from them, in the first edition of his work on midwifery. Dr. A. L. Galabin, associate obstetric physician and lecturer at Gay's Hospital, published a paper in Obstetric Journal of Great Britain and Ireland, in December, 1877, in which, by a fair and full review of the above statistics, he showed the fallacy of the deductions which had been made; and Dr. Playfair, in his second edition, acknowledges that the conclusions he had drawn were open to doubt. Dr. Galabin published a still more convincing refutation in the same journal of July last.

I have space for but little more than his conclusions in this paper. He compares Dr. Hamilton's maternal mortality with the recorded results of many thousand cases of labor in public charities, or private practice, in

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all of which the forceps were seldom used, and in some of the latter not at all; gives separate and full statistics, which together amount to upwards of 40,000 cases, in which the average maternal loss was 3.4 per 1,000, against. Dr. Hamilton's 7.3; and remarks, that considering the favorable character of the child-bearing population, according to his own statement, in the district where Dr. H. practices, these figures do not show that so frequent forceps use lessens the maternal risk or mortality, or that it does not decidedly increase it.

As to fœtal mortality, Dr. Hamilton's own statistics are very wonderful, being but three in 1,371 cases; and he further assumes that an immense improvement has taken place generally, in this respect, of late years; stating that, while before 1852 the fœtal death ratio in England was nearly 25 per cent., it had recently fallen to four or five. Dr. Galabin says, in regard to Dr. H.'s own statistics: "It detracts much from their value, that he does not keep a record of the total number of still births, including putrid children and those premature, but over six months. In regard to the claim of fifteen per cent. gain in fœtal life of late years from frequent forceps use, he shows clearly how Dr. H. had inadvertantly misinterpreted the statistics upon which he based his statements, and proves, by records, that some physicians in private practice who used the forceps very seldom, or not at all, had nearly as good a ratio of infant life as Dr. H. himself; also, that in the Rotunda Hospital at Dublin, the fact was that the enormous increase in the forceps rate, from 1.7 per 1,000 from 1826 to 1833, to 96.4 per 1,000 from 1868 to 1875, under the mastership of Dr. George Johnston, had improved the total rate of still-birth only 0.4 per cent.; and that, from whatever cause, the maternal mortality had nearly doubled, having risen from 9.7 to 19.3 per 1,000. He concludes, from statistics taken from a great variety of sources, and tabulated in his papers, that it does not appear that the widest difference in forceps cases, even including Dr. Hamilton's astonishing results, made a difference in fœtal mortality of one-half of one per cent., while in many cases no gain at all appeared, and the maternal mortality was decidedly increased.

In an address by Dr. Robert Barnes, read before the Obstetric Society of London, May 7th, this year, some statistics are given which are strong evidence of similar results. Dr. Dunn, in private practice in London from 1830 to 1850, records 4,049 cases of labor; forceps used once in 202½; total maternal deaths, 0.67 per cent.; total fœtal deaths, 4.1 per cent.

Dr. Bailly, who practiced in a rural district fifty years, ending 1859, and used forceps very rarely, in 6,400 cases had a maternal mortality of only one in 430. Dr. Ramsbotham, of the Royal Maternal Charity, from 1828 to 1850, in 48,996 cases used forceps once in 670. Total maternal deaths, 0.41 per cent.; total fœtal deaths, 3.7 per cent.

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Dr. George Johnston, master of the Dublin Rotunda Hospital from 1868 to 1875, in 7,682 cases used the forceps once in ten and one-half cases. Maternal deaths, 2.3 per cent; fœtal deaths, 6.1 per cent.

In the latter case, one of frequent forceps use, and one of the most prominent among those that have been claimed as evidence of the advantage from such use, both maternal and fœtal deaths are quite largely in excess of the others.

Dr. J. G. Swayne read a paper at the meeting of the British Medical Association last year, the purpose of which was to show that the saving of infant life by forceps had been over-estimated. To prove this position he cited statistics of his own, and among others compared one hundred cases of primiparæ in the early days of his practice, when forceps were less frequently used, with one hundred of the same class in recent years. In all there was no complication of labor; in the first series the forceps was used twelve times; in the last, thirty times. In the first, no maternal death, and no craniotomy; in the last, one of each. In other respects, the two groups were nearly upon a par in infant mortality.

Dr. Lombe Athill, in his report of the Rotunda Hospital, made before the Obstetric Society of Dublin, in May, 1878, after stating that the percentage of forceps cases was very high, remarks: "A tendency, without doubt now-a-days exists, to the unnecessary use of forceps, and while satisfied that little danger exists of injury occurring from their application by skillful hands, even when needlessly used, I feel it to be my duty to discourage this tendency as far as in my power."

At a later meeting of the same society, December 7th, 1878, Dr. George Johnston, having read a paper advocating frequent forceps use, and expatiating upon the evil results to mothers which less frequent use and relying more upon nature's powers entailed, Dr. Athill said he believed the impression that any considerable gain to infant life was due to frequent use of forceps, was erroneous. He then compared the statistics of Dr. Johnston's mastership with that of his predecessor, Dr. Shekleton, who used forceps once in about thirty-one cases to Dr. Johnston's once in ten, and says: "If the forceps save life to the extent claimed, we should expect that the infant mortality in Dr. Johnston's practice would be much less; but we find that with Dr. S. it was 6.9 per cent. of all cases; with Dr. J. 6.1 per cent; but this refers solely to still-born children, and I affirm, that if we add those who died within a few days of birth, there would be no gain in favor of Dr. J.'s practice. Again, during the mastership of Dr. Collins, who hardly ever used the instrument, the infant mortality was 6.5 per cent." Dr. Kidd made some full statistical statements of the results at the Hospital during the management of three previous masters, showing that in 32,683 cases, only 1.99 per cent. required forceps, while

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under Dr. Johnston 9.56 per cent. were delivered by them; he thought the latter must be meddlesome, or the former negligent midwifery. He also stated that the rate of maternal mortality had nearly doubled during Dr. Johnston's mastership. At a meeting of the Obstetric Society of Dublin, December 7th, 1878, Dr. Kidd presented still fuller statistics, for which I can only refer to the Obstetric Journal of Great Britain and Ireland, February, 1879, but which fully substantiate his statement that the maternal mortality had nearly doubled. I have already quoted enough to show that statistics do not authorize, as has been claimed, this over-frequent use of forceps; that the gain to fœtal life is slight, if any, and the maternal mortality is rather increased than diminished.

My own experience, although the recorded data are not sufficiently extensive to warrant any inference from them alone, corroborates the deductions drawn from these larger statistics. In a general obstetrical practice of thirty-eight years — more than twenty among all classes of people — I have made use of the forceps in not over two to three per cent. of all cases; the fœtal loss, excluding premature and decomposed children, and including consultation cases, has been but little over two per cent., and excluding the latter 1.2 per cent.; the maternal deaths which can in any way be considered as a result of labor, and not including cases of phthisis, dying in from four to twelve weeks after delivery, are 0.2 per cent.

Not only does the claim of greatly lessened fœtal mortality fail of establishment, but the assumption of Dr. Johnston at the meeting just referred to, that reliance upon nature's powers exposes the mother to danger of inflammation, sloughing of vaginal tissues, ruptured uterus, etc., appears to be unsupported by evidence. Dangers of this kind are really rare, most assuredly not frequent enough to require forceps in one out of ten to twelve patients. In a proportion of these, we might deem the instrument useful, in a much smaller proportion necessary; but when we take Dr. Hamilton's generalization, viz., that the second stage of labor should not be allowed to last usually much more, and occasionally much less, than two hours — and which he holds to be a vital part of the management of labor — we must conclude that the great majority of cases in which forceps are thus used, are cases of lingering or tedious labor, which would terminate favorably for both mother and child under nature's efforts, assisted by other agencies which the accoucheur has at command; and although, if a child can be born without forceps it certainly can with them, and in skillful hands the greater part of the mothers as well as the children might suffer no injury, yet the obstinate fact remains that by such forceps use the maternal mortality has been greatly increased.

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I have no space to quote statistics or opinions from the continent, and can but briefly refer to the expression of opinion in this country, as manifested during the last session of what may be justly esteemed a society formed of the best talent of our cities and country—the American Gynæcological Society. During its meeting last September a discussion upon this subject followed the reading of a paper by Dr. T. Addis Emmett, of New York. The report was statistical in character, and related to the cases of vesico-vaginal and vesico-rectal fistula which had come under his observation; the evidence concerning the length of labor, management, use of instruments, etc., being mainly derived from statement of the patients. One of the conclusions from the whole was, that forceps played little or no part in the productions of these lesions, but that impaction and want of attention to the bladder were the principal factors.

Dr. Emmett's deduction was, that there is danger to the soft parts of the mother when the head ceases to recede after a pain. In the discussion which followed some extreme views were promulgated, among others, that it was not safe to wait fifteen minutes after the head had apparently ceased to advance; and one professor of obstetrics stated that he used the forceps where he felt positively certain that nature could and would terminate the labor favorably for both mother and child. It was proper to do this, he argued, to shorten the maternal sufferings. There were, fortunately, present those who could not allow such utterances to pass unnoticed. Dr. Humphreys Storer, of Boston, remarked of the inference which had been drawn, that neglect of the forceps was influential in the production of vesico-vaginal fistulæ, that among several thousand cases of obstetrics, he had seen but two cases in his own practice, and no one in his city used the forceps less frequently than he did; there was no question that evil did, at times, result from its use; and, while he believed it necessary when impaction occurred, we should point out, especially for the benefit of the younger members of the profession, that it is not an instrument to be constantly used, and that injurious consequences could be and were produced by its too frequent application. As to the occurrence of lacerated perineum as often without as with the forceps, he remarked, that almost every case of that injury which had fallen under his observation had been produced by this instrument.* In this respect, my own experience perfectly coincides with that of Dr. Storer.

*While this is passing through the press I see, in the just published "Lessons in Gynæcology" of Dr. Wm. Goodell, a sentence which so fully endorses these views, that I will quote it. On page 74 he says, in reference to perineal rupture and other injuries by forceps: "To tell you the truth, such grave lesions to the mother, and for the matter of that, to the child also, are so constantly brought to my attention, that I am disposed to accept Baudelocque's dictum, that, take it for all, 'the forceps has been more injurious than useful to society.'" My advice, therefore, to you — and you will find it a very safe one to go by—is, that in general, and always with primiparæ, you take off the forceps as soon as the perineum begins to bulge, and leave the final delivery of the head to the expulsive efforts of your patient."

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Dr. Barker thought the dangers from the use of this instrument had been exaggerated; did not like the statement that it should be applied when the head ceases to recede in the interval of pain, but would substitute, that it should be used as soon as it is evident that the head ceases to advance, while sufficient uterine contractions are taking place to cause it to advance if delivery is to be effected in the natural manner. He also alluded to the influence of a prolonged first stage of labor as being an important factor in producing prolongation of the second stage, by exhausting nerve power; and that, in such cases, it was necessary to give the patient rest by opiates, or remove the uterine inertia by full doses of quinine repeated at short intervals. The acting president, Dr. Goodell, of Philadelphia, agreed mainly with Dr. Storer in thinking that the tone of the discussion needed considerable qualification. It was well known that the perineum especially, and not unfrequently the cervix, were torn during the use of forceps, and the worst bilateral lacerations of the os he had ever seen were thus produced. Another claim besides the presumed saving of fœtal life, and lessening the maternal risks, was also here advanced for the early and frequent use of forceps, viz., the shortening of the suffering of the mother, and a more rapid convalescence. My own conviction is, that there are other and safer agents for both shortening and lessening the pains of labor, than the forceps would be, certainly in the hands of the great majority of the profession. Lingering labors, tedious and protracted labors, when the proportion of the fœtal head to the pelvic cavity is not decidedly abnormal — are produced for the most part either by uterine inertia, by sufficiently or even too vigorous but irregular contractions, in a class of cases by very close adaptation of the fœtal head to the pelvis, and in a still smaller class by the same condition complicated with defective position, so that with normally vigorous contractions the labor progresses very slowly. These conditions can be to a great extent met and controlled by agents which have been tested and found efficient. Full doses of quinine where the uterine inertia results from loss of nerve power; ergot in feeble contraction when there is not general exhaustion; anodynes and anæsthetics to relieve pain, regulate the contractions, and promote dilatation of rigid soft parts; and expression to assist in the latter stages of delivery. These I shall discuss hereafter.

With the present tendency which obtains with some teachers, it appears to me that the young physician who has received their instruction may be many years in practice, and not know what nature can achieve in parturition; that he will never dare to wait a sufficient length of time, from the fear of impaction, with consequent sloughing, death of child from pressure, etc., which will ever be vividly present to his imagination

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in any tedious or protracted delivery. He will not realize that these dangers are over-stated, as my own experience, and the experience of thousands of practitioners who commenced their work before the fashion of forceps-delivery had become rife, can testify.

Parturition is, generally at least, a physiological and not a pathological process, and if we await patiently the gradual moulding of the head and dilatation of the soft parts, even if much time be required for the process, assisting, if necessary, by such agents as I have named, there is certainly much less risk to the mother, and an equal chance of favorable result to the child, than in the substitution of continuous pressure and forced extraction of the forceps. I do not at all wish to place myself in the position of one who decries or undervalues it, but that of one protesting against the unnecessary over-frequency of employment which once before obtained, and which seems to be the expression, in action, of the belief that the whole business of parturition should be taken out of the hands of nature and be effected by those of the accoucheur.

I will not say that saving of time, or the convenience of the physician, are motives which often influence to this frequent resort to forceps, but I will say, that the practice of always taking the instrument, may prove a strong temptation in that direction.

A member of the State Medical Society of Virginia, at a recent meeting, expressed the opinion that the late Prof. Simpson had laid the profession under great obligations, by removing the objections to frequent instrumental delivery, as his excessive practice required him to make use of the forceps without delay. The natural inference is, that the time of the accoucheur is a prominent consideration, and that, if labor does not proceed with sufficient rapidity to suit his convenience, and he deem himself sufficiently skilled, it is perfectly proper to proceed at once to delivery, in order that he may meet other engagements.

It appears to me that the inevitable result of the tendency I have been indicating, unless arrested by the combined and vigorous protests of all who really value the forceps, and advocate its proper and judicious use, will be another reaction against its employment when desirable, or even necessary.

I have said that there are other agents which can meet some of the conditions which have been urged as requiring forceps. Of these I will first speak of

ERGOT AS AN AID IN LABOR.

All, or nearly all, agree that where there is manifest uterine inertia at or near the close of the second stage of labor, and hence reason to apprehend hemorrhage, ergot should be administered; and many give it, uniformly, at the close of this stage, to secure more rapid and thorough

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involution and avert after-pains. It is the practice at the Rotunda Hospital in Dublin to give an ounce of the infusion immediately after delivery, and, as a rule, to repeat it three times a day for two days in all multiparæ, and in cases with relaxed uterine walls, every two to six hours. It is claimed that by this course less after-pain, better involution, and a more rapid and perfect convalescence is effected.* (I feel assured that these measures are especially necessary in that institution, from the frequency of forceps delivery.) But, while allowed to be useful in such conditions, it has been, and is still regarded by some, as a dangerous agent when given earlier in labor. There is no doubt that it may be, and has been so, when given improperly; in cases where the difficulty in progress was not the result of want of a *vis a tergo*, but of the resistance which a disproportion between head and pelvic cavity might induce, even with powerful uterine efforts.

The principal objection which has been urged against its use, is, that the contractions produced are permanent, and somewhat tetanic in character, having no marked intermission during which the placental circulation can re-establish itself, and that hence there is great danger to the mother, and risk of asphyxia to the child, from the violence and energy of the constant uterine action.

Dr. Robert Barnes, in a recent paper, says: "The action of ergot on the uterus is uncertain. You want a certain amount of uterine action. You give ergot, and the desired result may ensue, but it may not; you may have too much or too little. In the first event, you have evoked a Frankenstein, whose brute violence you can neither subdue nor regulate. The force is in excess, and then you have to fear the very dangers of lingering labor, rupture of the uterus, other injuries to the soft parts, and the death of the child, which you called in ergot to avert."

Such effects I have not observed as the result of its use, and cannot deem them general or necessary, although they may be produced by overdose and improper administration. What remedy have we, of any efficiency, that will not produce unpleasant results when given in excessive dose? I claim that the initial dose should be small, and repeated until the effect required is produced; and, that if, from any idiosyncracy or susceptibility to the drug, too constant an effect has followed its use thus, that it *can* be subdued and regulated much more certainly than the action of most powerful remedies.

In cases of deficiency of expulsive power, where the uterine contractions are not normally vigorous and effective, and continue thus (unless in those depending upon exhausted nerve power, where quinine is the best ecbolic), while the os is dilated, or perfectly dilatable, and the pelvis

*See paper by Dr. Richardson in Boston Medical and Surgical Journal, April, 1879.

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free from any abnormal contraction, this agent will impart the needed contractile force, and complete delivery without recourse to instrumental aid; and, more than the forceps can do, will secure thorough uterine contraction at the end of the second stage, thus preventing hemorrhage. Its action, in my experience, can be so regulated by the repetition of only sufficient doses at proper intervals, and by the simultaneous use of chloroform, that the contractions produced will intermit as usual. I will here briefly copy from the records of a case of this kind in 1853. The patient was a woman of forty years, had had three children, the youngest being twenty years old, since which birth she had not been pregnant; saw her on the morning of July 23, at 5 o'clock; pains had been felt during the whole previous night, and the os uteri was well dilated; I was called away after being with her an hour, and did not return until 10:30 A. M., when I commenced the use of ether and chloroform. The pains had not been very urgent or efficient during my absence, and became even less so after the administration of the anæsthetic. At 11.30, gave a large tablespoonful of an infusion of two grammes (half a drachm) of freshly powdered ergot to a tea-cup two-thirds filled with boiling water; some increase in the efficiency of pain followed, and the dose was repeated in thirty minutes; after which the uterine contractions were much augmented, the inhalations resumed, and the labor continued steadily to progress, the contractions being regularly intermittent, until the birth of a boy, at 2:30 P. M., who cried lustily as soon as born. This is the earliest case in which I used the combination,—one which has served me well, very many times since, both when ergot was used for too feeble uterine action during the use of anæsthetics, and in a few instances where the anæsthetic had not been commenced before the use of ergot, and was given as well for its modifying power upon the effect of the drug, as for its effect in relieving pain.

I am not alone in these views. In a very able paper upon uterine therapeutics, published in the Transactions of the Obstetrical Society of Edinburg, Vol. IV, Dr. Alexander Milne says of this agent: "Those who have doubted or decried it, form a very small section. The faithless few may be divided into two classes: those who view it as worthless, and those who deem it destructive. As for myself, I have found it an invaluable help on many occasions. It has rendered me not only useful service, but aid of a kind which I believe no other means could have rendered, and I must add I have seen very little of its alleged evils." As to the objection that it destroys the child by producing continuous contraction, and that it cannot promote expulsion because it produces a uterine tension inimical to dilatation, he says: "The best answer to all this is, that ergot is used by numerous practitioners daily, not only with

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success in furthering delivery, but with perfect safety. I must have used it hundreds of times, and with the best results." He also states that if the contractions produced be too continuous this condition can be remedied at once by the use of chloroform or opium.

In regard to the preparation. In earlier days I relied entirely upon the infusion of the freshly-bruised kernel—4 gms. to about 130 gms. boiling water, about 16 gms. given at a dose once in thirty minutes, until sufficient uterine action was induced. Of later years, have used Squibb's fluid extract, or what is perhaps still better, a solution of his semi-solid extract in water. There have been statements published, that the ustilago maidis, while fully as efficient, will not produce the severe contractions which sometimes follow the use of ergot, and that it is not as liable to disturb the stomach. At a recent meeting of the Cincinnati Obstetrical Society, Dr. Sawyer, of Ohio, stated that he had observed this in his own experience; I have not employed it, being satisfied with the effects of the secale cornutum.

ANÆSTHETICS IN LABOR.

Although this subject has been many years before the profession, its literature is extensive, and a vast amount of experience has been accumulated, the discussion of the merits and dangers of obstetric anæsthesia is still proceeding quite vigorously.

Before speaking of the results of my own experience, in a report like the present, it seems proper to notice briefly some of the latest published opinions in this country and in Europe. Prof. Pajot, and Dr. J. C. Campbell, formerly chief of the Obstetric Clinique of the Faculty of Paris, have been exchanging hostile pamphlets for some years, and I find in the Obstetrical Gazette of Paris, of last year, quite a full review of Dr. Campbell's last publication, and of Prof. Pajot's reply. The great difference seems to be that the former insists upon practical degrees of anæsthesia, and, while admitting that chloroform, administered to women in labor, can be given, as in any other case, to the extent of producing complete surgical anæsthesia, with entire loss of sensibility first, then intelligence, and lastly, mobility, he also claims that it is possible to arrest its effects at any one of these stages; and that by careful use, the effect in labor may be limited to the annulling of sensibility to pain; that by the aptitude which practical experience gives, one can soon learn to produce the true obstetric anæsthesia, and not go much beyond it, at least until the labor is nearly ended. These are the same points which I urged in a paper upon this subject, read before the Milwaukee County Medical Society in 1852.

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Prof. Pajot characterizes these partial anæsthetic effects as simply imaginary, as he did in 1875; only a delusion of the same character with other temporizing measures which act upon the imagination of the woman, and serve to gain time; that they merely *think* they would have suffered more but for the partial anæsthesia; and, in regard to full inhalation in the latter part of the second stage, he considers its dangers and disadvantages as far outweighing its benefits.

Prof. P.'s fundamental proposition is: "No woman ever died from the sufferings of a natural labor; one *can* die from chloroform."

The former part of the proposition is open to criticism, as well as the latter; but many others have reasoned in this so-called scientific, but entirely unpractical manner, upon this subject.

Dr. Campbell's experience has led him to very different conclusions. He has observed the effects of the early semi-anæsthesia in relieving reflex nervous disturbance and thus favoring dilatation of the os, as well as lessening the pain. He claims also for the parturient woman an immunity from the dangers ordinarily attending more perfect anæsthesia, even long continued, and ascribes it to the violent uterine contractions, which force the blood to the brain.

In England, Dr. Playfair speaks favorably of chloral; thinks ether preferable to chloroform, and says that a common error at the present time is the use of chloroform to an extent which materially interferes with uterine contraction and predisposes to subsequent post-partum hemorrhage. And in another place, speaking of too rapid labor from excessive uterine action, he says: "Chloroform will be found most valuable, from the rapidity with which it can be exhibited and its power of diminishing uterine action; that which proves one of its drawbacks in ordinary practice, will here prove of much service."

Dr. J. M. Hoxie, of Liverpool, writes in the British Medical Journal that he thinks the indiscriminate use of these agents likely to prove injurious in many cases, by retarding delivery and increasing the tendency to post-partum hemorrhage, and that they also prolong the period of convalescence.

In the London Lancet, August, 1878, Dr. A. McWeir, of Leicester, writes: "As chloroform becomes better known and appreciated, as a damper of vital force, a paralysis of the vaso-motor system, and therefore, a powerful predisposer to hæmostatic congestion, I think fewer yet will sanction its use during parturition." A few paragraphs farther, a passage occurs which shows of what character his experience has been. He writes: "I recall with horror the days in which I revelled in the use of chloroform, through ignorance and inexperience giving it until consciousness had departed, and then resuming the forceps operation." My

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present object is not to discuss anæsthesia in relation to obstetric operations, but to my mind the testimony of one fair observer to the beneficial effects of anæsthetics to mother and child, from experience during a term of years, is sufficient to entirely destroy the effect of such declamatory rhodomontades as the one just quoted; and there is abundance of such evidence running back through the years to Channing and Simpson.

Dr. J. Minot, of Boston, recently reports in the Boston Medical and Surgical Journal, twenty-four cases in which ether had been employed, in seven of which post-partum hemorrhage occurred. He concludes that this was not caused by the anæsthetic, as six of the patients had taken it in previous labors without any such result, and in three the labor was severe and the forceps used. He inclines to the belief that when the patient is exhausted, and the uterus does not contract energetically, ether may have some influence in the production of hemorrhage, but thinks it far from settled.

Dr. Cuthbertson, in a prize essay published in 1862, upon this subject, records abundant testimony to show that the influence of these agents in producing post-partum hemorrhage has been over-estimated. He enumerates among the contra indications for their use, dilatation of heart cavities, and organic disease of lungs, membranous or parenchymatous. I can recall many cases in past years in which I refused to administer them in like conditions. Per contra, quite recently, Dr. Angus McDonald, of Edinburgh, in his work upon the Bearings of Chronic Diseases of the Heart upon Pregnancy and Parturition, etc., considers the use of chloroform in labor, in cases complicated with heart disease, not only not "contra indicated," but beneficial if carefully used. Prof. Barker has also for many years taught that, as a rule, heart disease complicating pregnancy especially indicates the use of chloroform during labor.

Dr. Lusk, of New York, presented an able paper at the first meeting of the American Gynæcological Society, the object of which was to forewarn and forearm the obstetrician as to any possible contingency which might occur from its use: He says: "Personally, I use chloroform in labor constantly, as a means of lessening suffering. I should regret it exceedingly should any utterance of mine discourage others in its employment." He desires merely to protest against the belief that *any* obstetric use of chloroform is devoid of risk. His main propositions are:

1. Deep anæsthesia, carried to the point of complete abolition of consciousness, in some cases weakens uterine action, and sometimes suspends it altogether.

2. Chloroform, even when given in the usual obstetric fashion, namely, in small doses, during the pains only, and after the commence-

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ment of the second stage, may in exceptional cases so far weaken uterine action as to create the necessity for resorting to ergot or forceps.

3. Patients in labor do not enjoy any absolute immunity from the pernicious effects of chloroform. Under this head, he says: "I do not wish to exaggerate. Every year I attend patients who tell me their physicians had tried chloroform in a previous labor, but had speedily laid it aside because of symptoms which had caused them alarm. Yet on repeating the trial I have experienced only pleasant and beneficial effects from its use.

4. Chloroform should not be given in the third stage of labor. The relative safety of chloroform in parturition ceases with the birth of the child.

5. The more remote influence of large doses of chloroform, during labor, upon the puerperal state, is a subject which calls for further investigation and inquiry.

I fully accede to all these propositions, and would only make the suggestion that, in normal cases, we have, in ergot, the means of safely and certainly remedying the occasional tendency to diminished uterine effort and hemorrhage.

Did time permit, I would present the favorable views of M. le Dr. Bailly, of M. Lucas Championniere, of Prof. Courty of Montpelier, who, in a paper translated in the Medical Times and Gazette, November, 1878, argues that the comparative absence of post-partum hemorrhage is a point in their favor, and of many others. I have mentioned the principal objections which have been made, and will briefly reply, after a few suggestions why chloroform in normal parturition is so safe, properly used, when compared with its results in surgery or dentistry.

First, the recumbent posture lessens the risk.

Second, the muscular exertion during the pains forces the blood to the brain, and prevents the cerebral anæmia, which is stated to be the cause of death from this agent.

The third, and principal reason, is the utter dissimilarity in the method and purpose of use. The object of the surgeon is to produce full anæsthesia before the pain is inflicted; of the obstetrician to relieve the pain as it arises, by a rapidly-acting agent, which annuls the sensibility to its perception, *pari passu*, until the uterine contraction has reached its climax, when the antidote is at once withdrawn. Even should it be necessary for relief to carry its effect to temporary unconsciousness, the interval permits the elimination of the drug by the inhalation of pure air, and the entire, or, if used freely, the partial passing away of its influence until again needed by the recurrence of contraction

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This alternation is kept up in most cases until birth; in all, until the arrival of the last throes of labor, when, if necessary, the agent may be pushed to full unconsciousness with entire safety and relief.

Dr. Lusk stated in his paper that he had found a record of five cases in which there were serious symptoms; in two of these death ensued, and in the others the pulse ran down in an alarming manner. Any one who will carefully peruse the account of these cases must be convinced that, in most of them, the agent was not properly used. One had undergone great exposure and fatigue while in labor, and the anæsthetic was given for the purpose of relaxing a contracted uterus, with shoulder and funis presentation of a dead child. A towel wet with chloroform was put into a funnel and crowded over mouth aud nose; the patient struggled, then ceased to breathe, and it was some time before respiration could be established. In one of the cases of death a convulsion occurred. Chloroform was given, and, the pains returning after a time, it was repeated; the uterus contracted well, the head was delivered, when a tremor occurred, and the pulse ceased. In the other case of death, in Lyons, a shoulder presentation, the chloroform was given preparatory to version, by a female attendant in charge of the ward. The account shows that this was done in the absence of the medical attendant, for when a surgeon was sent for, he found the pulse thready, the face blue, etc., and the patient died in ten minutes. These are really cases of full surgical anæsthesia, and in the latter, certainly not accompanied with the proper care and attention.

Dr. Lusk also says: "I gladly admit, as nearly true, that no well authenticated case of death from the direct effects of chloroform has occurred during labor, when the anæsthetic has been administered by a qualified medical man."

I do not think any attendant should ever be permitted to administer it in the absence of a physician, or even when he is present, unless under his constant direction and supervision; and just here, perhaps, is one cause of the opposition and objection to its use, although it has not been stated, viz., that it necessitates the presence of the doctor, and his unceasing care and attention.

Anæsthesia, as I have already quoted, is said to produce a tendency to post-partum hemorrhage, and to the prolongation of labor by lessening uterine contraction. If it be true that the use of these agents for the purpose of relieving suffering during parturition is carried to the extent of producing such effects, the duty is imperative to correct what must be an improper use, save exceptionally—at the close of labor—and to point out how these exceptional results can be avoided or remedied. No one doubts its capacity, when carried to the full surgical extent, of arresting

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all muscular contraction. I have so used it myself, but not for the purpose which we are considering; and while acknowledging that there are some cases in which anæsthesia sufficient to wholly relieve—or nearly wholly relieve—the pain attending powerful contractions near the end of the second stage of labor, will delay progress, I think they are so few that they cannot be made the foundation for any general rule which should deprive the large majority of its benefits; and moreover, that where such conditions do occur, the anæsthetic may be suspended, or the uterine contraction augmented by safe and effectual means, while the inhalation is continued.

While the cases are few in which I have found it necessary to take this course, I find notes of quite a number in primiparæ even, where, just at the close of the second stage, the uterine contractions were so powerful (the perineum yielding slowly) that I have induced anæsthetic slumber and entire unconsciousness for ten to thirty minutes, without arresting the pains, and in some, have been obliged to resort to pressing back the head, from apprehension of perineal laceration.

For many years, when anæsthesia proper to the stage of labor lessens the force of uterine contractions, I have been led to think that they were not normally vigorous, independently of the anæsthetic; and if the pelvis is well formed, do not hesitate to give ergot, and go on with the inhalation. As to post-partum hemorrhage, it is apt to occur in cases where contractions are feeble. And when this inertia exists, it is true that anæsthetics may possibly increase it, and be followed by flooding, which probably would have occurred even had no anæsthetic been given. In such cases ergot is indicated, independently of anæsthesia.

The most severe cases of hemorrhage I have seen were those in which no anæsthetic was used, or in very small quantity and for a very short time, from the fact that the uterine contractions were feeble. I find upon examining notes of cases in which anæsthetics were given, from 1848 until the present time—between two and three hundred in number—there are only four in which unusual flowing occurred, — one of them not severe, three alarming. I have also notes of four cases of hemorrhage quite as severe, where no anæsthetic had been given: Three cases are recorded in which I suspended the use of the agent on account of the inefficiency of uterine contractions, and these were before I had learned by experience, the mutual modification produced by the use of ergot in proper doses, in conjunction with the anæsthetic.

The objection has been made that they retard the convalescence of the patient.

I cannot but regard this as a mere statement upon theoretical grounds, or based upon an improper use of obstetric anæsthesia: My own uniform

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experience is just the reverse. I cannot recall one instance where I had reason to regard convalescence as retarded by its use, but very many where I thought it more speedy and perfect. In many cases of multiparæ who had before borne one or more children without its aid, the voluntarily proffered assurance has been, that they had never before recovered so rapidly and thoroughly. To me, this appears reasonable, aside from experience.

It poisons or narcotises the child.

I am well aware that experiments have been said to prove that an agent of this character may enter the fœtal circulation through the placenta, but I can only say that I have seen no evidence of any such result. My percentage of still-born children under anæsthesia will compare very favorably with that where it was not used, and equally so with ordinary statistics of loss of fœtal life in labor. In cases where I have used it most freely and fully, the children have cried vigorously immediately after birth, and I have no knowledge of any evil consequences subsequently, though I have carefully watched for them.

To conclude: The profession generally do not appear to properly estimate the value and utility of anæsthesia in parturition. After seven years of practice before commencing its use, I was impressed with the fact that convalescence was more rapid, and after evil consequences less apt to occur when it was employed. Experience teaches the deleterious effects of severe and prolonged pain. It rapidly exhausts nerve power. In primiparæ especially are these agents useful. Here there is often an apprehension of evil which adds to the nerve-exhausting effect of the pain. In addition, the cervix uteri and perineum are usually more slowly and painfully dilated and expanded. By the use of ether in small doses, we aid materially the relaxation of the os and cervix; indeed, I have very rarely found any other agent necessary, and by the addition of chloroform when the second stage is reached, we can subdue the pain to a great extent, and further the expansion of the perineum. In my own practice I have never seen a case of ruptured perineum which required surgical interference, and think it in a great degree due to the influence of anæsthesia. The only limit to its employment which I now regard is the objection of the patient, and even this, if the labor proves severe, is generally overruled during its progress. There are some cases, of course, when the suffering is comparatively so slight, and the duration of labor so brief, that it is unnecessary to urge, or even suggest its use.

The agents now ordinarily employed for the relief of parturient pain (exclusive of opium and its alkaloids), are ether, chloroform and chloral. It is quite important that these should be pure. I formerly had sulph.

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ether carefully washed, but for some years have used Squibb's preparations. The ether acts well in the early stage of labor, sometimes, however, producing excitement of a hysterical character when first inhaled. This can be easily controlled by firmness on the part of the physician, and soon passes off; but it does not act with sufficient rapidity when the labor has become severe. It is best then to add one part of chloroform to two or three of ether, varying the proportion in accordance with the amount of pain to be relieved, and often, before the close, using the chloroform alone.

The method of use, which I regard as very important in attaining the stage of insensibility to pain, more or less complete, and not proceeding much beyond it, is as follows, probably familiar to you all; but, as Dr. Emmet says of another subject, "success lies greatly in attention to minute details." The anæsthetic should be administered at the very moment the pain is first felt to be coming, or known to be so by the finger in the vagina; the inhalation rapidly continued until the uterine contraction has reached its climax, and then immediately stopped. Inhalations should not be used between the pains, though often urgently desired from feelings of discomfort, especially when their use has just been commenced. I am strongly inclined to the belief that want of attention to this rule has led to some disturbances in the regularity and force of uterine contractions which have been urged against anæsthesia. When a case is first seen when labor is quite advanced and pain severe, it is best to give at once full inhalation to the extent of producing quiet, after which its use can be continued as before stated. Towards the close of labor, the quantity must be sufficiently increased to meet the conditions. I have not unfrequently, in severe suffering just before delivery, carried it to the extent of producing sleep, undisturbed by any sign of consciousness save inarticulate sounds and some reflex motion of the limbs, and which was only awakened from after the birth, and the renewed consciousness evinced by the expression of surprise at the vigorous crying of the child.

With chloral I have had but little experience. Dr. Pinard, in his monograph published last autumn, in Paris, upon the comparative action of these agents, states that he does not find as good results from it as from chloroform; that its absorption is slow, its time of action almost always indeterminate, and therefore not to be relied upon in labor, although he regards it of great value in eclampsia. In the few cases where I have given it, I have found it necessary also to resort to ether or chloroform. Its effect is continuous, and exerted both when needed and when not especially desired.

I have said nothing of anæsthesia in obstetric operations. Nearly all

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admit its value, not only for the relief produced, but also on account of the greater facility for manipulation afforded by muscular relaxation. And yet, its use thus becomes a partially or fully surgical one, and if unsafe at any time in the parturient woman, I should expect it to prove so when administered for the purpose of turning or other obstetric maneuvre or operation.

A few words regarding the third stage of labor. Dangers have been noticed, which may attend the use of Crede's method of assisting placental expulsion. In squeezing the uterus with both hands, pressure upon the fundus being made by the fingers, it may be indented when somewhat relaxed, and this may prove, and is said to have been regarded, as the starting point of uterine inversion. I believe there would be less difficulty attending delivery of the placenta, and less frequently irregular contractions restraining its passage, if a few simple rules were followed, *i. e.*: Tie the cord on the navel side only, after the respiration of the child is fully established; then, with one hand upon the uterus, not squeezing forcibly, but gently grasping it, a turn or two of the cord being wound about the fingers of the other hand, make, with the forefinger alone, along the cord, gentle traction in the proper direction. In five to fifteen minutes, unless in quite exceptional cases, the uterus will contract, and by the pressure of the left hand, and gentle traction by the right, the placenta will be found in the vagina. It may occupy the time of two or three uterine contractions.

The flow of blood from the maternal end of the cord, I consider of essential importance, as, by reducing the placental turgescence, it favors expulsion. This has been for many years my own practice, and I have very rarely had any difficulty with the placenta.

I am aware that it has been recently claimed by Prof. Zweifel of Erlangen* that, by dividing the cord before the expulsion of the placenta, the child loses quite an amount of blood which was its due; according to his statement, nearly one hundred gms., or about one-third of its whole blood. These conclusions were corroborated, but hardly to the full extent, by Hofmeier, Budin, and others. Still later, Dr. Leopold Meyer† of Copenhagen, made careful investigations with somewhat different results, making the difference in the amount of blood received by the child in early or late ligation about sixteen gms., about one-fifth to one-sixth the quantity stated by Zweifel. He concludes that the time of ligation is of no material consequence for the child, and only deems it best to wait until the hyperemia produced in the umbilical vein by the first more or less convulsive breathings had abated. The great discrepancy between these results led Dr. Max Weiner† of Breslau, Spiegelberg's assistant, to a

*American Journal of Obstetrics, January, 1879.
†American Journal of Obstetrics, April, 1879,

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renewed investigation. The results of his carefully conducted experiments prove that immediately after being expelled from the uterus, the child gets, by means of its contractions, all the blood necessary, and that a few minutes after birth, further contractions drive only minimal quantities into the child's circulation. Dr. Porak* is also stated to have come to the same conclusions. He finds that where the cord has been tied late, the children do not thrive any better, and that they are notably more subject to jaundice. I have mentioned this somewhat fully, because the subject was introduced in the address of the Chairman of the Obstetric Section, at the last meeting of the American Medical Association, and the conclusions of Zweifel regarded as proved. The same impression was also given by an article published in the St. Louis Courier of Medicine for April, 1879.

There are many subjects of great and recent interest which should claim attention in a report like this. A few only of these I can briefly notice.

ABDOMINAL PALPATION,

As a means of diagnosis of fœtal presentations, and the correction of faulty position by external bi-manual version, is not new, but an increased interest has of late been manifested in its practical application. It was recommended by Wigand, of Hamburg, in 1807. In 1838 M. Lecorche Colombe, chief of the obstetric clinique, presented a memoir to the Academy of Sciences in Paris. Prof. Hubert, of Louvain, published upon the same subject in 1843, and since that time it has been brought to notice by various other writers abroad. In our own country, Dr. J. T. Whitaker read a paper upon it before the Cincinnati Academy of Medicine, in October, 1869. Dr. J. R. Chadwick,† of Boston, Dr. J. L. Wilson,‡ and several others have written of it. Combined external and internal manipulation was advocated by Dr. M. B. Wright,‖ of Cincinnati, in 1854, and by Dr. Brexton Hicks,§ of London, in 1860. This latter is only applicable after labor has actually begun, and the presenting part can be reached through the os uteri, and consequently is quite different in method as well as time of application from the version we are considering. External bi-manual version has not been generally adopted or practiced, probably from the apparent inefficiency of the proceeding, on account of the readiness with which the fœtus would resume its faulty position after correction, the difficulty of the proceeding during labor,

*Cincinnati Obstetrical Gazette, July, 1879.
†Boston Medical and Surgical Journal, Aug., 1872.
‡American Practitioner, Dec., 1873, and Dec., 1878.
‖ Transactions of the Ohio State Medical Society, June, 1854.
§London Lancet, July, 1860.

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and the lack of thorough knowledge of the best method of palpation. The treatise of M. Pinard, published in Paris during the past year, upon abdominal palpation in an obstetric point of view, has the merit of giving more precise rules, founded upon practical experience attained in the examination of many thousands of pregnant women. I can only give a brief abstract of his method. Place the patient upon her back, limbs extended, *not* semi-flexed, head slightly elevated, and arms by the sides. Exploration to be made only in the absence of all uterine contraction. First explore the pelvic region, by placing the two hands five or six centimetres to the right and left of the median line, the ends of the fingers in contact with the anterior pelvic arch, and depress the abdominal parietes from above downwards, and from before backwards, grazing with the fingers the horizontal branches of the pubis. One then will find the pelvic excavation either full or empty; if full, it is a head presentation, for no other fœtal part engages itself in the pelvis before labor. When the head is thus found, it is more prominent and accessible on one side than on the other, and this prominent part, more elevated and firm to the touch, is the forehead. If this be at the right, we diagnose the left position, and vice versa. To corroborate this diagnosis, one should then seek the position and direction of the back.

When the pelvic cavity is empty, one finds the inferior extremity of the ovoid fœtus either just above the area of the superior strait, or in one of the iliac fossæ. M. Pinard states that, among the thousands of women he has thus examined, he has only twice found the two extremities of the fœtus situated at the maternal flanks. In all others where the pelvic cavity has been found empty, the breech was either directly above the superior strait, or in one of the iliac fossæ, and the lower extremities are then found near the basin. He states that there is very little difficulty in distinguishing the head, from its form, its greater solidity, and from the ballotement which is easily produced; the pelvic extremity being more voluminous, less resisting, and accompanied by the feet and hands.

He has also a chapter upon multiple pregnancies and dropsy of the amnion. In the first, a permanent tension of the uterine walls is found, in the place of the yielding which one otherwise perceives, in the absence of uterine contraction; the feeling to the touch being like that of a cyst well filled. In order to diagnose in these cases, it is necessary to find the fœtal poles and backs. In twin cases sometimes only three poles can be made out, the fourth being behind one of the others. He considers it generally easy to find the two backs and the smaller members, and has thus in the maternite affirmed the presence of twins in thirty-two cases, and with one woman had perceived three heads, and his prognosis was confirmed by the result of the labors. In dropsy of the amnion, while

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there is also a permanent tension of the uterine walls, there is great mobility of the fœtus, and an exaggeration of the impulse of ballotement. The death of the child is recognized by the softness and flaccidity of the parts, and the difficulty of distinguishing the poles.

The application of this method to the correction of improper presentations, is also detailed. This version by external maneuvre the author does not claim as original, but thinks that by his method of palpation, and of restraining the fœtus from again resuming the faulty position after its correction, he has removed the objections and obstacles to its successful practice.

The method is as follows: The woman being recumbent, in the same position as for simple palpation, and no uterine contraction existing, two cases may present themselves. 1st. The head reposing at the level of one iliac fossæ, and the breech in the opposite flank. In this apply one hand upon the head, the other upon the opposite pole, and by a gentle but persistent movement, push the breech upwards and the head downward, until the fœtal poles coincide with the median line. 2d. The head may be found in contact with the uterine fundus and the breech below. Here raise the head a little and make it more movable, by direct action upon it, or upon the breech; when the latter rests in the excavation, it may be necessary to introduce the finger into the vagina for the purpose of pushing up the uterus, and more easily diverting the breech to one side of the pelvic basin. The two extremities being thus movable and accessible, the hands are applied with slow but sustained effort to make the breech rise and the head descend in the shortest and easiest way.

He finds but one obstacle to the success of this maneuvre; that is, immobility preventing the change, and which occurs: first, in multiple pregnancies; second, in certain cross presentations of the back, the result of accommodation; third, in presentations of the shoulder with uterine malformation; fourth, the commencement of labor.

But after the faulty presentation has been made out and corrected, the new position will not be retained, especially in multiparæ, in which it principally occurs, unless some method of external restraint be adopted and continued. For this purpose, M. Pinard has devised an abdominal bandage or belt, which he describes and figures. It is formed at the sides of elastic tissue, but with a firm front piece, to which strips of whalebone are added, to assist in keeping it in place, and which, by an equable support of the abdomen, will, he states, prevent the rechange of position.

In reply to the question, when this maneuvre should be executed, and the bandage applied, he responds: "If, in the last month of pregnancy,

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the head of the fœtus is not in the pelvis, it is necessary it should be put there and retained."

The results which have been obtained in diagnosis alone, to be able to ascertain the position before labor, and to state it with almost absolute certainty, make this subject worthy of close attention; and, when we add to this the ability to interfere for the correction of unnatural presentations, these, certainly, are sufficient reasons to induce every accoucheur to practice and become familiar with the method.*

PUERPERAL ALBUMINARIA

Has attracted much attention of late, not only regarding its treatment, but also in the way of endeavor to point out what are the especial symptoms which indicate the near approach of danger, and which, if not relieved, will call for the induction of labor; and, in what cases we can feel that reliance upon further medicinal management will probably be a safe course.

Convulsions do not occur in all, nor in the majority of cases of puerperal albuminaria, neither is albumen always present in cases of eclampsia. Dr. Noeggerath† stated in the New York Obstetric Society, last year, that in thirty per cent. of cases of convulsions, it is not found. He also mentions three conditions which are regarded by him as indicating danger:

"1. Where albumen is associated with anæmia or hydræmia.

"2. When it is associated with certain nervous disturbances, such as severe headache, disorders of vision, prickling and crawling sensations in the extremities, etc.

"3. When it co-exists with high arterial tension."

Dr. Lusk, of New York, believes that the cases of albuminaria during pregnancy, in which the induction of premature labor is required, are small in number. In the great majority, even with headache, dizziness, etc., it is better to use palliative treatment and wait, than to resort to active interference.

Some valuable observations, which may aid as guides in this question, were made by Dr. W. L. Richardson, of Boston, in a paper read before the American Gynæcological Society last September. His first position is that the *quantity*, as well as well as the quality, of the urine should be *daily* and carefully noted. The latter shows danger, the former its real extent and imminence. He detailed eleven cases, of which six only ter-

*Note—Since the above was read, an able paper by Dr. Paul F. Munde has appeared in the July number of the American Journal of Obstetrics, to which I can only refer as being a thorough resume of the history of this subject, and a very valuable treatise upon its practical application.

†American Journal of Obstetrics, October, 1878.

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minated in convulsions. In these the daily amount of urine regularly lessened, while in the others, although the symptoms were as decided, or even more strongly marked, the daily quantity did not fall below a certain amount. His conclusions, briefly stated, are, that in all cases where the albumen is constant while the amount of urine decreases, remedies for re-establishing the impaired kidney secretion, or supplementing it by the action of other organs, should be at once thoroughly used, and if these fail to improve the condition, and nervous symptoms supervene, the amount of urine still lessening, labor should be induced. Dr. Thomas thought the author struck the key-note of the subject by noting the decrease in the urinary secretion. He had seen but two cases of puerperal convulsions in twenty-seven years which were not accompanied by uremic symptoms. He specified two classes of cases; in the one, urine was freely secreted, and although there was considerable albumen, very little of it solidified in boiling with the addition of nitric acid; no marked tendency to amaurosis, no stertorous respiration at night. In the other class, a small amount of urine, which, when treated by boiling and nitric acid, became solid one-half or more than half its bulk; marked œdema, stertorous breathing, etc., existing. In such cases, as a rule, he thinks the only safety is in the induction of premature labor. Dr. Barker expressed his confidence in the efficacy of treatment, and when medicine failed to increase or supplement sufficiently the action of the kidneys, thought venesection often advisable; lives could be saved by that means, in his opinion, that could be by no other. At the same time he was in accord with what had been said, that where symptoms threatened the life of mother or child, premature labor should be induced; although the general character of his remarks evinced that he deemed the necessity of this quite infrequent.

Dr. Richardson, in a late number of the Boston Medical and Surgical Journal, has called attention to an additional indication of danger, during pregnancy, where no previous symptoms of renal difficulty had existed. He details three cases of acute renal lesions, in which, nausea and vomiting having ceased for weeks and months, had returned, and for some time were the only symptoms of an acute parenchymatous nephritis, as evinced by the examination of the urine.

In regard to the general treatment of albuminaria, little can be added to the admirable treatise of Dr. Barker in his work upon puerperal diseases. There are two remedies only which require notice as recent. Tarnier's skimmed-milk diet does not appear to have been as generally successful in puerperal albuminaria as had been hoped. Much has also been anticipated from the action of jaborandi, and there have been a number of reported cases in which its employment seemed decidedly

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beneficial, both before and after eclampsia had occurred. Dr. M. Langlet* recently reported a case in which the symptoms which usually precede eclampsia were markedly present, and in which the remedy was continued sixteen days, the œdema gradually disappearing, and the albumen regularly decreasing. The patient was delivered at full time, and recovered perfectly. In this case, all ordinary remedies had been previously tried. The effect of the jaborandi was principally manifested in the augmentation of the urinary secretion, with comparatively little action of the skin. The writer states that this result has been observed more often when the remedy is administered in small doses.

There have been also cases in this country where beneficial effects have been observed and recorded. I will only refer to one, reported by Dr. J. H. Hunt, at a late meeting of the Medical Society of Kings County, New York. A primipara, first seen two weeks before labor, anasarcous, with scanty and albuminous urine, etc. Under the action of jaborandi, apocynum, digitalis, etc., the œdema disappeared, and the urine became more abundant, with less albumen. Convulsions came on during labor, when the os was partially dilated; chloroform was administered, and the child in a short time delivered, living. After delivery, the chloroform was omitted, and convulsions returned, which were again controlled by its administration. As soon as it could be discontinued sufficiently to allow the patient to swallow, one C. C. (fifteen m.) of fluid extract of jaborandi were given every fifteen or twenty minutes. Each time, however, that the anæsthetic was suspended, premonitory symptoms of returning convulsions showed themselves, until she had taken eight C. C. (two drachms) of the jaborandi. She then began to perspire freely, and, upon withdrawing the chloroform, awoke perfectly herself. After the perspiration had ceased, it was deemed advisable to change her wet clothing, and soon after the convulsions recurred. Chloroform was again given, and one cubic centimetre of fluid extract jaborandi administered hypodermically every fifteen minutes, until four doses had been given, when again profuse perspiration occurred; she awoke perfectly lucid, and was then allowed to go to sleep in her wet clothing; afterwards had no return of eclampsia, and made a speedy and perfect recovery. I have detailed this case fully, as the remedy appeared to have a decided effect.

Prof. Hofmeier, of Berlin, stated, last year, that he could not ascribe any definite good effect to this agent, in the treatment of puerperal albuminaria, and Dr. Fordyce Barker of New York, in a paper read before the New York State Medical Society, January, 1878, finds, in the greater part of the seven cases of its use which he fully details, that there was

*Gazette Obstetricale, Paris, August, 1878.

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great depression and exhaustion produced by its action, and thinks there is no conclusive evidence, until then published, of its beneficial effect; believes that its utility in the treatment of puerperal albuminaria is more than doubtful, and that after convulsions, its depressing influence as well as its peculiar action which prevents sleep, etc., render it an unsafe and even a dangerous remedy. This depressing influence has been thought capable of modification by the administration of a small quantity of brandy, shortly before its use. Perhaps we have not yet learned to use the agent properly—in dose sufficient, and yet *not excessive*—for I notice, in a case of eclampsia reported at a meeting of the New York Obstetrical Society, last year, by Dr. McLane*, that profuse sweating and *excessive* salivation followed its use, which the reporter deemed disadvantageous, as it seemed to exhaust the patient, and he thought it was a question whether depriving the blood of so much fluid might not have produced a condition favorable to the formation of heart-clot, from which she was thought to have died, after a partial recovery. It appears that the dose given in this case, by rectal enema, was one hundred and twenty-eight cubic centimetres (four ounces) of the fluid extract. This was a very large dose, fully three or four times larger than usually employed. It has been generally administered, upon the continent, in the shape of muriate of pilocarpine and by hypodermic injection, the dose being from fourteen to twenty millegrams. In conclusion, I would only say that in the third class of cases mentioned by Dr. Noeggerath, where high arterial tension exists, there is no doubt of the efficacy of venesection, as advised by Dr. Barker and others; and mention that Dr. Pros, of La Rochelle, details three cases of eclampsia which were successfully treated by venesection and chloral. I refer to this on account of his theory of the disease, which rejects the idea of a material lesion of the kidneys, and regards the albuminaria as an effort of nature to rid the blood of excess of fibrine generated by pregnancy.

While making use of jaborandi and its alkaloids for the relief of albuminaria, the fact that uterine action has, at times, been induced by it has been noticed. During the meeting of the German Gynæcological Society at Cassel,† Sept., 1878, this subject was discussed. Prof. P. Mueller, of Berne, stated that he had found it fail to induce premature labor. The experience of Dr. Saenger, of Leipsic, had induced him to regard it as possessed of a qualified ecbolic influence, and while not always capable of inducing uterine action, that it is so in case a tendency to expulsion be present, and that it would therefore be advantageous when a labor had imperceptibly begun, and during labor would regulate and stimu-

*American Journal of Obstetrics, August, 1878.
†American Journal of Obstetrics, January, 1879.

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late uterine activity. He added that it is well borne by parturient women even in the larger doses which he had used,—four centigrams. Dr. Massman, of St. Petersburg, states that he has several times seen premature delivery follow the hypodermic injection of eight millegrammes of muriate of pilocarpine given for œdema. Dr. Kleinwachter* relates a case of a healthy woman thirty-three weeks pregnant, when it was given for the purpose of inducing premature labor in case of contracted pelvis. Nineteen to twenty millegrammes by hypodermic injection brought on uterine contractions; three injections of fourteen to twenty millegrammes were given at intervals of a few hours, as the pains ceased after being severe, and a dead child was born.

Dr. F. Schauta, of Vienna, reported in the Wien Med. Wochenschrift, of 1878, fifteen cases in Prof. Spaeth's service, in which the trial of the injection of muriate of pilocarpine was made for uterine inertia, after the rupture of the membranes. The cessation of uterine action occurred both in the first and second stages of labor, and had existed from two and a half to twenty-four hours. In all, uterine pains came on in from two to ten minutes. He remarks that although strong pains were produced, the forceps was used in two cases, and that, except for slight local lesions in these, and in one where labor was protracted by a moderately contracted pelvis, all the mothers made an uninterrupted recovery, and in some a particularly rapid involution of the uterus was noticed.

There are two operations of great interest to the obstetrician, both of which are substitutes for, or presumed improvements upon, the Cæsarian section. First,

LAPARO-ELYTROTOMY,

As revived by Dr. Thomas, of New York. The first paper upon this subject was read before the New York Academy of Medicine in March, 1878. The operation is a substitute for Cæsarian section, from which it differs by inflicting no wound upon the uterus or peritoneum, the abdominal incision being made above the pubis, the vagina opened, and the child brought through the uterine neck and external wound. Dr. Thomas' paper, above named, gave a history of five operations, two performed by himself and three by Dr. Skene, of Brooklyn — all cases of deformed pelvis; three mothers survived, and four children were delivered alive, The history, method and feasibility of this operation were fully discussed in an exhaustive paper read by Dr. H. J. Garrigues, of Brooklyn, before the last meeting of the American Gynæcological Society.† There seem to be two principal dangers in the operation: hemorrhage from the vaginal walls, and injury to the ureters; the first obviated by making a very

*Archives fuer Gynæcologie, XIII, 2.
†N. Y. Medical Journal, Oct. and Nov., 1878, and Trans. of Gy. Society for 1878.

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small vaginal incision and afterwards tearing the tissues parallel to the pelvic brim, to the desired extent of opening; the second, Dr. Thomas thinks, should not occur with care, stating that in his first operation he searched for the ureter, but did not carry his dissection far enough to find it, and he did not think it was necessary to expose it or injure it. This operation has since been performed for the first time in Europe, by Mr. T. W. Hime, of the Sheffield School of Medicine, in July, 1878;* patient a woman of thirty-seven years, in labor twenty hours, at full time, with cancerous disease of rectum and vagina, which latter was scarcely two inches wide. There was great disposition to hemorrhage, and it was thought the Cæsarian operation would cause death at once. The antiseptic spray was not employed, but other antiseptic measures adopted. A living male child and the placenta were delivered without difficulty. The uterus contracted well; not an ounce of blood was lost during the operation. The woman died about two hours after. Post-mortem examination showed that the bladder and peritoneum were uninjured. The author expresses the opinion that the revival of this procedure will exercise a great influence upon operative midwifery in the future.

The latest and seventh operation was performed in London, Nov. 22, 1878, by Mr. A. W. Edis, in a case of contracted pelvis, after failure to deliver by forceps. A living male child was extracted, weighing nearly eight pounds, the placenta delivered and the uterus contracted well; there was but little blood lost, but the patient died forty hours after the operation No post mortem was allowed. It was a bad case, and the operator thinks the Cæsarian section or cephalotripsy would have been followed by the same result.

The operation would appear less dangerous in cases long delayed, than the Cæsarian section, because the uterus is not wounded, the peritoneum not divided, and there is less hemorrhage and less shock; although from the time and the amount of anatomical knowledge and manual skill required it is perhaps not as well adapted to general and country practice. Dr. Thomas' result — three mothers living and four children born alive — is a better one than the statistics of the Cesærian section can show. In both fatal cases the women were in a dying state, and the last cases in England were such as would undoubtedly have died from that operation.

The other operation intended to lessen the dangers attending Cæsarian section, is the extirpation of the body of the uterus and ovaries at the same time the child is removed. This was first proposed and performed by Prof. E. Porro, of Pavia,† and his first case was successful. The uterus

* London Lancet, January, 1879.
† American Journal of Obstetrics, January, 1878.

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is partially drawn forward through the abdominal wound, incised, and the child and placenta removed, the uterine neck then constricted by the ecraseur or ligature, and if free bleeding occurs after the child is removed, the ecraseur is applied previously to extracting the placenta. After the chain is tightened, the uterus is divided three or four centimetres above it, the pedicle firmly ligated, trimmed down to about two centimetres, and fixed in the lower angle of the abdominal wound. This was the first case of Cæsarian section which had ever succeeded at the Pavia Lying-in Hospital.

Prof. Spæth of Vienna*, after four fatal cases of ordinary section, considering hemorrhage the chief source of danger, and one not to be avoided by uterine sutures, determined, after hearing of Prof. Porro's case, to operate in the same manner, which was done June 22, 1877. After the removal of the child and placenta, the bleeding from the uterus could not be controlled, and the chain of an ecraseur was thrown about the neck at the level of the os internum, embracing the fallopian tubes at about their middle; the chain was then tightened to the extent of checking all trace of bleeding, and the uterus divided by knife, the stump trimmed down, the abdominal cavity carefully cleansed, four drainage tubes inserted, two in Douglas' sac, and two higher up on either side; the wound closed about the pedicle with silk button sutures, and covered with Lister's dressing. Although from the general condition of the woman, the case was an unfavorable one, the patient recovered. The second case was operated upon in a similar manner, September 2, 1877. The patient was in a condition which seemed hopeless; the uterine incision bled profusely, the placenta being beneath it. The case did badly from the first, and died eight days after the operation. Prof. Spæth states that his first case was the only case of Cæsarian section which had proved successful at the Vienna Lying-in Hospital during the present century.

Dr. R. Pawlik†, assistant at Von Braun-Fernwald's Clinic, at Vienna, reports two cases. The first a primipara, with deformed pelvis; operation performed by Prof. Von Braun-Fernwald; the room heated to 22 R., and spray apparatus employed. The walls of the uterus were divided, and the child removed; the chain of the ecraseur was then applied to the uterine neck below both ovaries, and tightened; the placenta was extracted, and afterwards the uterus and both ovaries separated by the knife, about two centimetres above the chain; a few vessels bled; the chain was tightened, the stump trimmed down to one centimetre, Douglas' space cleansed, the stump brought into the abdominal wound, which

*American Journal of Obstetrics, July, 1878.
†Vienna Med. Wochenschift, Nos. 2 and 3, 1879.

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was united by seven button sutures, the stump projecting about one centimetre. The cut surfaces were then bathed with a solution of chloride of zinc, and the whole abdomen covered with Lister's dressing. This was changed the next day, on account of a reddish discharge; the chain was tightened, and a Spencer Wells' clamp applied. This was removed on the eleventh day; no cervical fistula was left. The second case was a patient forty years old, pelvis narrowed by osteo-malacia; the operation much the same; patient died sixty hours after; lower coils of small intestine were found adherent to rectum and pelvic peritoneum, from fibrino-purulent exudation.

Prof. Breisky, of Prague, has also recently operated under antiseptic rules; patient chloroformed; the neck of the uterus first constricted by copper wire ligatures; a living child extracted, and the uterus and both ovaries removed about an inch above the wire ligature; stump fixed in the lower end of abdominal wound, which was closed by eight silver and four silk ligatures; three drainage tubes were left in the abdominal cavity. The patient was discharged well, in seven weeks.

Prof. Wasseige, of Leige,* has also performed it in the same general manner with the addition of a drainage tube through Douglas' sac. The patient recovered.

Prof. Mueller, of Berne,† has also performed it in a case of greatly contracted pelvis. Patient had been in labor three days, and initial symptoms of septicæmia were present. The abdomen was opened and Maisonneuve's constrictor applied around the cervix and ligaments; uterus then opened; decomposed gases and waters escaped, followed by the fœtus; placenta was removed, and uterus and ovaries divided by knife and extracted; stump attached to lower angle of the wound by a few stitches and wound closed by sutures, the peritoneum being carefully included in the stitches; loss of blood less than in normal parturition. Ten days after the operation the wire dropped off. This patient fully recovered. Prof. M. thinks this proceeding should be adopted whenever the Cæsarian section is necessary, since it lessens materially the dangers of secondary hemorrhage and septic peritonitis, and also prevents a repetition of the pregnancy. He favors the use of the clamp, if the cervix and ligaments are not too thick, and if the uterus can be sufficiently drawn out. I have here mentioned but eight cases (there are probably others which have not come under my notice) with only two deaths. This is a far greater percentage of recovery than simple Cæsarian section has ever given. Time and experience only can decide between these two

*Gazette Obstetricale, Paris, March, 1879.
†American Journal of Obstetrics, April, 1879.

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operations, but results thus far show that either of them is preferable to the old method.*

THE USE OF ANTISEPTICS IN THE PROPHYLAXIS AND TREATMENT OF SEPTICÆMIA.

I do not propose to discuss the etiology of child-bed fever or its full treatment, but to briefly speak of the prominent part which septic poisoning plays in the disease, and of its prophylaxis and treatment by local antiseptic means. Whether we favor the views of Dr. De Gorrequor Griffith, now being published in the Obstetric Journal of Great Britain and Ireland, *i. e.*, that there exists a unity of poison in the zymotic diseases, including puerperal fever; or incline to the opinion of Dr. Wm. Strange, as stated and defended in the London Lancet, last November, that zymotics, such as scarlet fever, always and only produce their like; or believe that, although essentially distinct, that these latter affections are capable of producing such blood changes as to furnish an appropriate nidus for the formation and development of the septic poison; and, while we cannot doubt that puerperal women may be attacked by any zymotic affection to which they are exposed or liable, and that the results are usually serious and may be septic in character, and that in malarial regions intermittent or remittent fever may declare themselves during the puerperal state, we must all agree in regarding the large majority of the febrile affections which follow labor, as the results of septic poisoning. I am strongly inclined to the opinion which Dr. Athill expressed during a recent discussion of this subject, viz., "that any puerperal woman is more or less in what may be called a septic condition"; and the results, though limited, of my own experience would lead to the belief that the so-called milk fever is but a manifestation of mild character of the same agency.

The theories of the origin and nature of the septic poison, I cannot dwell upon. We know that it may be generated in the patient as well as introduced from without. As to the manner of its production. Mr. Burdon Sanderson says: "Now, it seems proved that it is the growth of bacteria *in these fluids* that makes them deadly; ordinarily bacteria are known to be harmless enough. They may enter the blood by thousands without effect, but when planted in a suitable medium, *i. e.*, decomposed blood, or products of inflammation, by some unknown manner of ferment

* NOTE.—Since the above was written, I find in the Boston Medical and Surgical Journal, of July 17, 1879, mention of a still more recent operation by Prof. Carl Braun, of Vienna. Four days after, the patient was progressing favorably. And while it is printing, I find a successful case, operated upon by M. Tarnier, related in the Paris Gazette Obstetricale of Aug. 20, 1879. It is also there stated that the simple Cæsarian operation has not once been successful in Paris since 1789.

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or secretion, they produce the septic poison." Although innocent in themselves there is no septicæmia where they are not, or have not lately been, present.

I should also say that the researches of those who claim to have experimentally investigated this subject, prove that when the septic poison is derived from without, communicated by the doctor, nurse, or in any other way from previously-existing cases of the disease, it gains in intensity; that when self-generated it is not so virulent as when introduced from without, hence the great importance not only of checking its earliest development, but also of the most rigorous care and observance of antiseptic precautions to avoid its transmission.

What this poison is, what its true germ, we do not know, while we *are* cognizant of some of the conditions essential to its generation; and, although we have no known agent that will destroy it, that can safely be introduced into the system, we can, by removing these necessary conditions, prevent the further increase of the poison when it has already manifested itself, and, what is even more important, prevent its development.

Langenbach, who claims to have employed puerperal drainage in 1872, and who practiced intra-uterine injections of a carbolic acid solution during the same year, saving thereby an apparently hopeless case of septicæmia, gives a rational explanation of the beneficial action of intra-uterine irrigation in such cases. He says: "The inflammatory infiltration of an infected wound can persist and increase only if the infectious processes at the surfaces are maintained and fed; reproduction of the septic material thus occurs, and these reproductive processes in the wound produce, so to speak, a *vis a tergo*, which constantly drives new broods of infectious germs into the canals and tissues of the wound. If this *vis a tergo* is paralyzed or annulled, by disinfection and cleansing of the surface of the wound, its results also disappear, the reproduction of septic material gradually ceases, and the septic fever, for want of pabulum, vanishes. Such a wound, of the largest dimensions and greatest susceptibility, is the cavity of the puerperal uterus," etc.

The theory here offered is proved correct by the practical results of the use of antiseptic agents. Experience teaches that their local action will both prevent and control the greater part, if not all, of the severe febrile affections which follow labor. This has been fully demonstrated by Bischoff, Schuelein, Richter, Schuecking, and many other eminent obstetricians in Germany, England, France and our own country. Hospital records and private experience show that a large diminution of fatality has been the result of their prophylactic and therapeutic employ-

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ment. I will quote a few statistical items, and mention some of the methods which have been found most safe and effectual:

Dr. W. Schuelein* reported, in 1877, the method and result of local antiseptic treatment commenced October, 1876, at the Maternal Hospital, in Berlin, under Prof. Carl Schroeder. In every case of offensive vaginal or lochial discharge, and all in which labor was unusually tedious or difficult, vaginal injections of a three-per-cent. solution of carbolic acid were used before delivery, and every newly-delivered woman received an intra-uterine and vaginal injection of one quart of the same solution. These measures were continued during the puerperal state, whenever there was sensitiveness of the uterus or parametrium, offensiveness or suppression of the lochiæ, rise of temperature above $101\frac{8}{10}$ F., or frequent pulse with normal temperature — the latter symptom being considered a sign of infection. In two hundred and one women out of two hundred and eighty-seven deliveries, merely prophylactic injections were made; in eighty-one they were required as therapeutic means, the number of injections varying from one to fourteen in different cases. Not a death from septicæmia occurred. His conclusions are:

1. With proper precautions intra-uterine injections are entirely innocuous.

2. The ratio of mortality from septic puerperal infection can be effectually diminished by their employment.

3. Grave affections are much more easily prevented by their use than by any other treatment.

4. The temperature frequently falls considerably within a few hours after the injection.

Prof. Zweifel, of Erlangen, is stated to have treated antiseptically one hundred and eighty-four cases of labor, with no indication of septic infection. His prophylactic method in ordinary cases is simple, consisting in the use of carbolated oil for the hands, and washing out the vagina with a carbolated solution. Also, after labor, all visible rents or abrasions in the vagina are touched with a powder composed of salicylic acid one part, starch five parts. Fehling suggests, in addition, several vaginal injections daily with a weak solution of salicylic acid.

Prof. Playfair records a case where the temperature of the woman was $105\frac{4}{10}$° F., a rapid thready pulse existed, and the general appearance indicated the most imminent danger. The uterus was thoroughly washed out with Condy's fluid and water. The same evening the temperature fell to 99° F. The succeeding day a return of the offensive discharge and an aggravation of the symptoms occurred; the irrigation was

*Berlin Zeitschrift f. Geb. u. Gyn., 2-1-77.

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repeated; the temperature again fell, and from that time she recovered without any farther bad symptom.

Prof. Carl Richter, of Berlin, is fully assured, that, in the three thousand uterine injections made by him, the fluid always readily escaping by the side of the tube, he often noted a falling of temperature from 1 to 6° F., and of the pulse from thirty to forty beats per minute, within one or two hours after the injection. He used them both for prophylactic and therapeutic purposes with very satisfactory results. He thinks there can be no question that already commencing septic infection was arrested, and severe puerperal disease prevented. Especially in commencing endometritis or para-metritis did the irrigation prove beneficial, and a cessation of the lochiæ, with slight rise in temperature and abdominal tenderness, were invariably removed by a few injections.

Prof. A. Schuecking, of Halle, has devised a system of permanent antiseptic irrigation, which he claims is an absolutely certain preventive of puerperal sepsis. He had treated five primiparæ after exceedingly severe labors, and three cases of septicæmia by this method with rapid and entire success. He uses a large catheter cut off at the end, connected side by side with a freely-perforated metal drainage-tube. This apparatus is wrapped with Lister's gauze, which forms a thick roll at the end of the catheter; it is introduced into the uterus immediately after labor, the drainage tube reaching to the internal os. The patient lies upon a pan, with a rubber waste tube leading from it. A small injection is first made with a five-per-cent. solution of carbolic acid, after which the stop-cock of the irrigator is turned so as to slowly discharge the fluid which is permanently used, from the receptacle above. This fluid is a ten-per-cent. solution of sulphite of soda, with five per cent. of glycerine added. Every twelve hours the catheter is removed, re-covered with fresh carbolated gauze, and reintroduced. Should evidence of a septic process already exist, the solution of sodium should be alternated with one of three per cent. carbolic acid. The former solution is well borne, entirely innocuous, and may be continued for a week without inconvenience. This method is said to be free from the dangerous results which have sometimes followed intra-uterine injections. Two papers have recently appeared in the Centralblatt fuer Gynæcologie, in which attention is called to this: Dr. F. Kuestner had made a five-per-cent. injection of carbolic acid into the uterus; unconsciousness, contraction of the pupils, rapid respiration, with dyspnea and a scarcely perceptible pulse suddenly ensued; the patient soon died. The autopsy showed that the uterus had not been injured by the introduction of the syringe.

Dr. Fritsch reports three cases in which alarming symptoms followed

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the use of similar means. In all there was sudden collapse, followed by unconsciousness and rapid pulse. In the second case, where carbolic acid had been used, the urine was very dark. Salicylic acid was the agent employed in one case. They all recovered. In all, the uterus was imperfectly contracted. Both writers ascribe these symptoms to the entrance of the disinfectants into the circulation through the patulous orifices of the womb.

They still advise their use where there is reason to fear the absorption of septicæmic fluids, but that they should be injected gently, any strong central jet avoided, and provision for a free return of the fluid made.

Dr. Milner Fothergill, of London, in a letter to the editor of the American Practitioner, dated March, 1879, gives an abstract of a recent lecture of Matthew Duncan upon this subject. He advises gentle pressure in making the intra-uterine injections, and a means of free exit; recommends a double tube, and the continuance of the irrigation until the fluid runs clear. He thinks one part of carbolic acid to fifty of lukewarm water a good agent. One danger of irrigation, he thinks, arises from the possibility of forcing the fluid through the fallopian tubes; says that poisoning to the extent of producing dark-colored urine should not excite alarm. In order to prevent the injected fluid from finding its way into the uterine sinuses he recommends the administration of ergot previously, and great caution. He discusses also the prophylactic use of antiseptics, advising carbolated lotions or ointment for the hands, etc., while he is opposed to the use of uterine irrigation in natural cases, or to leaving a drainage tube in the passages; he also suggests that the cord should be antiseptically dressed.

Dr. Murphy, of the Columbia Hospital, Washington, advises a solution of bromide of chloral for intra-uterine injection, as being less irritating than carbolic acid. He also makes use of a solution of permanganate of potash 1.3 grammes (20 grs.), potassæ chloratis 16 gms. to 1000. cubic centigrammes of water (2 pints), a teacupful of this solution to be added to a quart of warm water, for vaginal injection morning and evening, when there is any odor to the lochia, or soreness or tenderness of the vagina.

This practice of washing out the vagina in cases of fœtid lochia is not a new one. It was resorted to in the latter part of the last century. Dr. Barnes, in the London Obstetric Transactions, mentions that it was taught and practiced by Harvey with benefit; and Dr. White, in a monograph upon puerperal fever, published in 1785, states that he has witnessed good effects from emollient and antiseptic injections.

I may here state that, in a paper published in the transactions of this

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society in 1871, I quoted freely from a French author, cases which illustrated the decided remedial efficiency of intra-uterine irrigation with bland fluids in puerperal fever. While in private practice we may not find it necessary to adopt the full antiseptic measures which have been named, there is abundance of evidence to show that an ordinary observance of antiseptic rules will prevent the occurrence of disturbances which otherwise are likely to occur to a greater or less extent after labor. Merely washing out the vagina with a weak solution (one or two per cent.) of equal parts of carbolic acid and glycerine, two or three times a day, will remove and disinfect the half-decomposed blood and shreds of membrane, and prevent slight febrile disturbances, which are lighter manifestations of the same poison; and when increased heat or rise of pulse occur, intra-uterine irrigation should be at once resorted to, the fluid used to be a weak solution of carbolic acid, or, what I prefer, thymol, and the injection continued until the fluid runs away clear. In confirmation of this, I will refer to some statements of Prof. Cleaver of Keokuk*.

I have seen it recently stated that some German surgeons now prefer thymol to the carbolic acid as an antiseptic. Mr. Spencer Wells has used it in a series of ovariotomies, and acknowledges its superiority, the dressings producing no irritation or discharge, and requiring no change until the removal of the sutures.

Mr. Wells says of the thymol gauze: "While appearing to be quite as trustworthy an antiseptic as carbolic acid, it is free from the objections to which the latter is open, of stiffness, of irritating action upon the skin, and of disagreeable odor. It readily permits the transudation of any escaping fluid, but does not appear to increase any secretion or to irritate the edges of a wound, or the skin."

It is sparingly soluble in warm water, one part in a thousand. Mr. Wells uses that solution for spray and as a bath for instruments and sponges. Volkmann prefers one part of thymol, twenty of glycerine, and ten of alcohol, to one thousand parts water. Stronger solutions can be made by using as a solvent one grain of caustic soda or potash, to six grains of water. This will dissolve three grains of thymol, and may then be diluted to any desired extent. It is also stated that the poisonous power of thymol is much less than that of carbolic acid, although equally effective as an antiseptic.

HYSTERO-TRACHELORRAPHY.

I must not omit one of the most notable contributions to gynæcological surgery and pathology. To Dr. T. A. Emmet of New York is due the

*Medical and Surgical Reporter, March 16, 1878.

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credit of having shown that lacerations of the cervix uteri are the common cause of what has been called circumscribed areolar hyperplasia, or sclerosis of the cervix, and demonstrating that these forms of affection, with all their local and constitutional accompanying disturbances, can only be really cured by the reunion of the lacerated surfaces. This subject is not really new, since the first account of the operation, to which Dr. Munde has given the name, "Hystero-trachelorraphy," was published in 1869. In September, 1874, the author published another and fuller paper. He had then operated two hundred times. It has recently attracted much more attention. The frequency of these lacerations has been better recognized, as well as their influence in producing the appearances which have been called hyperplasia, inflammation and ulceration of the os and cervix. In such cases, by former management, as I have myself seen, a temporary benefit only has been obtained by long local treatment, to be followed sooner or later by the recurrence of the same conditions and symptoms; the only permanent cure being the reunion of the torn surfaces. I have time but to refer to the late valuable work of Dr. Emmet, to Dr. P. F. Munde's article in the January number of the American Journal of Obstetrics, 1879, and to an address before the State Medical Society of Pennsylvania, in May, 1878, by Dr. Goodell, for full statements of all the evil produced by these lesions, their incurability under the usual treatment, and of the tendency which they not infrequently manifest to take on a malignant character.

This operation brings to mind what promises to be a valuable aid to the gynæcological surgeon,— the denuding of surfaces to be united, by the revolving dentists' burr, or corundum wheel. A paper upon this subject was read before the Obstetric Section of the American Medical Association, last year, by Dr. A. H. Smith, of Philadelphia, in which he detailed his own experience in the usefulness of this instrument. He has employed it in six operations for lacerated cervix, and one case of fistulous sinus. He claims as a result of its use, great economy of material, as by the rapid rotation of a burr, with well sharpened teeth, or a corundum stone of coarse grain, the thinnest film of tissue can be removed, while by greater pressure it may be made to cut deeper; and the control over its action in dense tissues is greater than can be obtained over that of scalpel or scissors. It also gives a smooth uniform surface, well adapted for accurate apposition, and it can be applied in angles, pouches, or sinuses, where knife or scissors can only be used with great difficulty, and much uncertainty as to the amount which will be removed. Its action produces thorough revivication, without bruising, and is attended with less hemorrhage, and much less pain, than ordinary cutting

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instruments produce. Dr. Thomas had also used this instrument, before Dr. Smith, for the purpose of closing a sinus left after the operation for vesico-vaginal fistula, in October, 1877. Appended to Dr. Smith's paper is a full illustrated description of the Bonwill dental and surgical engine.

UTERINE FIBROIDS.

Time will only allow a brief reference to the recent increase in our facilities for the removal of sub-mucous or intra-mural tumors, pediculated or non-pediculated, or the treatment of the sub-serous variety. It is but a few years since (1872) that Prof. Hildebrandt inaugurated the use of a concentrated preparation of ergot by hypodermic injection, usually in the region of the umbilicus. This, which was quite successful in lessening or controlling hemorrhage, and in not a few cases producing extrusion or pedunculation, and thus favoring removal, was employed by many gynæcologists in Europe and in this country, either alone or combined with dilatation of the cervix and incision of the capsule. Squibb's solid extract has been deemed preferable in this country; 13.33 gms. (200 grains) dissolved in 16.66 cubic centigrammes (250 m.) of water, by stirring, filtered through paper, and the amount of fluid made up to twenty cubic centimeters (300 m.) by washing the residue on the filter with a little water. Each 0.05 cubic cent. (1 m.) represents four decigrammes (6 grs.) of the ergot in powder, and from 0.6 to 1. cubic centimetres (10 to 18 m.) of the solution have been injected once a day, or once in two days. Experience showed that the ergot would not always act favorably, and to Dr. T. A. Emmet, of New York, is due the credit (after having taught us the value and safety of the free local use of iodine, in checking hemorrhage when the tumors could not be removed) of patient and protracted investigation of a method, the utility and applicability of which he subsequently demonstrated and announced, viz: That steady and continued traction upon a sub-mucous or intra-mural tumor, would lead to its gradual extrusion from the uterine walls, while corresponding uterine contraction filled up at once the space thus left, and that a large tumor could thus, portion by portion, be cut away until all was removed at one operation. He thinks this operation safer than enucleation, and applicable when the latter would hardly be attempted by a prudent operator because of the uncertainty how deeply the uterine tissues may be involved.

Still more recently Dr. T. G. Thomas, of New York, has made what appears to be a decided improvement in the removal of fibroids of this character. The cervix having been divided, the tumor is seized with strong forceps, and at the same time that traction is made, it is gradually

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enucleated, or its attachments, large or small, divided by pushing up his serrated spoon with a swaying motion, hugging the tumor with its concave surface. This process of combined traction and separation is continued until the whole tumor is brought out. His first paper was read before the New York Academy of Medicine, January 31st, 1879.* He uses for exploring the uterus a thin strip of whalebone about 0.01 centimetre (⅓ inch) wide, with a bulbous extremity; this readily accommodates itself to the uterus, and allows quite accurate measurements of the attachments of the fibroid to be made without the risk of injury. He states that in one of the cases related he had some fear of passing into the peritoneum. In reply to the question, would he remove all such tumors with the serrated scoop, he replied, unhesitatingly, yes, for the method included traction by strong forceps. He also added, that he made it a rule never to interfere with a tumor of this description unless some impending danger was present; that he regarded the removal of fibroid, merely because it was a fibroid, as a culpable act, since at the time of the menopause it would disappear. In case of large tumors he advocates the division of the perineum before the removal, and subsequently uniting it. This scoop of Dr. Thomas has been used by others with much advantage. In use high in the uterine cavity, it has, however, sometimes been found to be not sufficiently curved in the shank to be readily applied, and, perhaps, may be improved by making the stem of a material which, while sufficiently firm, may be bent when required for the separation of portions near the fundus.†

The treatment of fibroids where surgical interference is judged inadvisable, and especially of the sub-peritoneal variety, by electrolysis, has been quite extensively tried by Drs. Kimball and Cutter. The American Journal of Medical Sciences, for July, 1878, contains an account of its employment by them in over fifty cases. In four the tumor entirely disappeared; in about one-third was stated to be reduced, and in the great majority the growth arrested. I must refer to the paper for the details of the operation.

Dr. I. N. Freeman,‡ of New York, reports a case successfully treated by this method.

Dr. G. H. Bixby,‖ of Boston, records a case of long standing, where great suffering had been endured, and the health greatly impaired; the sound passed nine inches into the uterus. Under treatment with ergot, violent uterine contraction occurred, which required large doses of opium

*New York Medical Journal, April, 1879.

†Since the above was read, a paper by Dr. Thomas, in the July number of the American Practitioner, contains an account of six later cases in which tumors were removed by the same method.

‡ Proceedings of Kings County Medical Society, July, 1878.

‖ Boston Medical and Surgical Journal, Sept. 5, 1878.

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to relieve, and its use was abandoned. It was then decided to make trial of electrolysis. Four days after the cessation of the catamenia, the patient being etherized, an electrode was thrust into the tumor through Douglas' sac, to the depth of three inches, the other pole being placed upon the surface of the abdomen above the tumor, and a constant current from fifteen, and later from eighteen cells was used for ten minutes. In about a week after this operation a marked local and general improvement commenced. Menstruation, thirty days after, was painless, free from coagula, and not excessive. The improvement steadily continued, and six months after, the patient considered herself in perfect health.

This method is certainly worthy of trial in those cases where other means of relief are inapplicable, or prove inefficient.

Dr. Cutter has also reported cases in which a marked change in the growth of these tumors was effected, by a diet consisting almost entirely of animal food, he regarding the growths as mainly due to excess of carbo-hydrates, starch, sugar, and fermentable food.

Battey's operation, in cases where life was endangered by hemorrhage, etc., and removal could not be undertaken, has been of late resorted to with satisfactory results. It has been performed for this purpose by Prof. Hegar of Freiburg, by Dr. Martin, Dr. Trenholme, Dr. Goodell, and others. In most of these cases there was great improvement; in about half, perfect cures.

In conclusion, among the recent advances in gynæcology, and most important as a necessary foundation of all stable progress, is the increasing recognition of the usefulness and necessity of greater attention to constitutional treatment and general management in the cure of female diseases. The comprehension of the fact that the uterus is only a part, though an important part of the female organism,—that, if its disorders, by reflex nervous action, can produce disturbances in distant regions, so functional and organic derangements of other important organs and tissues can also react upon the generative system. The tendency has been to too restricted a view to discover the true pathology of many uterine affections, and too much reliance upon local, to the neglect of judicious general treatment.

Fifty or sixty years ago, uterine diseases were often unrecognized, and their symptoms ascribed to other derangements. The introduction, or rather renewal of the use of the speculum by Bennett and his followers, and some notable results which were attained by local treatment, important advances as they were, as in many other like cases were followed by a propensity to the opposite extreme; and, from that time for many years, and until recently, especially among the younger members of the pro-

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fession, the uterus and its adjuncts have been regarded as the source of all female ills. The reaction has but now generally begun, although Prof. Tait, some years ago, deplored the neglect of constitutional treatment, and Prof. Field* of Dartmouth published a paper, in 1869, upon its necessity in local pelvic disease, but it is only during the past two or three years that like, and even more forcible utterances from influential sources have been frequent. I can only refer to the address of Dr. Playfair, before the Obstetrical Society of London, in February, 1878, in which he strongly inculcates the necessity for deeper study of the causes of uterine and pelvic lesions, and satirizes the prevailing fashionable tendencies in this branch of our profession, thus: "Some ten or fifteen years ago every anxious female inquirer asked if she was ulcerated; now, most of our patients express the sentiment, if they do not use the words, of the lady who said to me the other day, 'Doctor, for God's sake, tell me, am I displaced?'" Among many other papers in this direction, is one read by Dr. L. F. Warner of Boston, before the Obstetric Section of the American Medical Association, in 1878, showing the effect of deranged hepatic functions in producing uterine hyperæmias, congestions, etc., and the address of Dr. Wm. Goodell of Philadelphia, acting president, before the last meeting of the American Gynæcological Society, upon the causative relation of neurasthenia to uterine and ovarian disease.

*First number of the Journal of the Gynæcological Society of Boston, July, 1869.

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ARTICLE VIII.

ENCEPHALOID CANCER OF THE UTERUS, COMPLICATED WITH PREGNANCY.

BY WILLIAM F. WHYTE, M. D., OF WATERTOWN, MEMBER OF THE COMMITTEE ON OBSTETRICS.

Although cancer of the uterus is a form of disease which frequently presents itself, still, those cases in which it is complicated with pregnancy, are sufficiently rare to make their publication a matter of interest. The following case came under my observation about a year ago, and is reported from notes taken at the time.

June 27th, '78, I was called to see Mrs. N., whom her husband said was pregnant, and had been flowing several days. About a week previous to my seeing her she had a slight hemorrhage from the genital canal, and had called a midwife. The flow had ceased for a few days, and on its reappearance, the family had been alarmed, and I was sent for. Before making an examination I obtained the following history: She was thirty-two years of age, and had borne five children, two years having elapsed since her last confinement. About the middle of December, 1877, she had menstruated profusely, and the catamenia not reappearing the following month, she considered herself pregnant. On February 15th, they reappeared, and she flowed profusely for a week. About this time she began to feel pain in the abdomen, which increased slightly in severity as her pregnancy advanced. She felt quickening at the usual time, dating from her menstruation in December. During the spring and early part of the summer she attended to her domestic duties as usual, although she felt herself growing gradually weaker. When I saw her she was still able to walk about, although the greater part of the time she remained in bed. She had for two days been suffering from pains which she said resembled those of commencing parturition. The hemorrhage was slight and intermittent, and took place without regard to the pains. There was no ichorous or watery discharge from the vagina, nor had there been at any time. Dysuria had been present most

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of the time for a month previous to my seeing her. The abdomen was as large as at the seventh month of pregnancy, but I could not, by auscultation, detect fœtal heart-sounds or uterine souffle.

Vaginal examination by the finger discovered the cervix uteri to be three or four times its usual size, and excessively hard and nodular. The roof of the vagina was covered with a diffuse deposit of the same character, and the vaginal walls participated in the deposit to such an extent that the uterus had lost all mobility. The os uteri was unnaturally patulous, so much so that I was able to introduce my finger as far as the second phalanx, and found that the uterine neck was filled with the same dense fibrous deposit as that surrounding the uterus. From the nature and extent of the deposit in the cervix and vagina, I judged that dilation could not take place by the efforts of nature sufficiently to allow the expulsion of the child. Pregnancy being only six months advanced, of course precluded any operative precedure, with a view to saving the child. I therefore recommended non-interference. Two days after my first visit Dr. Feld saw the patient with me, and confirmed my diagnosis.

The case then fell into the hands of a homœopathic charlatan, and its subsequent history I obtained from the family after the death of the patient. Two days after I made my last visit, severe labor pains set in, and continued from Monday until Thursday night, when the liquor amnii were discharged.

On Friday the patient was seen by Dr. Cody, who found the uterus well contracted, but could not detect the outlines of a fœtus. The cervix was not more dilated than at the time of my first visit. He found the patient very much prostrated by long-continued suffering, and predicted her early demise. On the following Monday, the services of a midwife were secured, who, after persistent efforts, succeeded in pulling away, first an arm and then a foot of a macerated fœtus, and only desisted in her praiseworthy efforts on the death of the woman, which took place the same evening. It was impossible to obtain an autopsy. A noteworthy feature in the case was the absence of great pain, even after the disease was far advanced, she having suffered but slightly prior to the commencement of labor pains ten hours previous to her death.

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ARTICLE IX.

PAPER ON PATHOLOGY OF SCROFULIDES AND SYPHILIDES.

BY R. H. WILLIAMSON, M. D., OF MILWAUKEE, MEMBER OF COMMITTEE ON PATHOLOGY.

ARE THE SCROFULIDES AND SYPHILIDES PATHOLOGICALLY IDENTICAL.

So seemingly alike are these two classes of disorders, when viewed in their grosser manifestations by the naked eye, and also when viewed by the microscope in their earlier stages, that not a few notable medical writers suspect them to be identical in origin; and some do not hesitate openly to affirm them to be so. Cazenave seems to have taken the lead in this direction. He and his followers intimate that all strumous affections are but degenerate forms of syphilitic taint. With all due deference to these medical notables, we beg leave to differ from their suspicions and assumptions; for close clinical observation and most recent pathological discoveries clearly point to a non-identity of origin.

The scrofulides and the syphilides do indeed closely resemble each other in many particulars, but no one will contend that resemblances necessarily imply identity of origin, or that differences imply diversity of origin; for it is well known by the merest tyro in logical thought, that diverse causes may produce similar effects, and that the same cause may produce diverse effects. The inference of identity from certain crass similarities needs to be made, therefore, with extreme caution.

The following considerations are presented in proof that the scrofulides and the syphilides are heterologous in origin generally. This paper will first show the clinical and histological peculiarities of the scrofulides; next, those of the syphilides, in contrast; and, finally, give additional reasons for the position assumed.

THE SCROFULIDES.

By this term is meant all those cutaneous diseases that develop from what is well known as the strumous diathesis. They include those

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varieties pointed out in Hardy's classification, and adopted with slight modification by Piffard; such as the erythematous, the corneous, the pustular, the tubercular (both disseminated and ulcerative), the phlegmanous, and any combinations of these. Among these are included those varieties of lupus referred to in the older text-books of Germany, England and America. Whether lupus be really a scrofulous disorder, or not, cannot now be discussed, for want of time Most modern dermatologists confess that it is; a few eminent men, however, dissenting. Hebra and Virchow admit that lupus has a close family relationship to struma. Tilbury, Fox, S. D. Gross, and a few others claim that it is not scrofulous, because, in many cases under their care, they could not discover any glandular evidences of struma. Their conclusion would be satisfactory were we sure that their scrutiny for signs and symptoms were infallible, and were we not aware that the age in which lupus appears, is usually after the period when scrofulous enlargements about the glands have subsided. It is true, however, that in the majority of cases of lupus, scrofulosis is more or less distinctly traceable, and, furthermore, that lupoid tubercles are often found on strumous cicatrices. It might be added that the absence of certain visible signs of a disease is far from a sure proof of the absence of the diathesis from which the disease might be developed. Signs may be temporarily masked, while the diathesis remains.

The scrofulides are distinguished for the following peculiarities:

1. They are always deeply seated, and are never superficial, even in the erythematous form. They always involve the deeper layers of the skin.

2. They are usually circumscribed, and are not diffusely scattered over the whole surface of the body, like the syphilides.

3. Their progress is remarkably slow. Rarely is their duration less than six months, and they persist for a period varying from two to twenty years, always recurring in the same form and in the same locality

4. The ulcerations of the scrofulides are significant, both in form and condition. They are irregular and jagged in outline, with their edges thin and burrowed under, with their floors bloody and fungous, with pale granulations, that are sometimes very exuberant. The floors of scrofulous ulcers are never covered with a grayish, filmy membrane, unless there be a specific complication co-existing.

5. In scrofulides there is usually more or less swelling of contiguous tissue, which, accompanied by a peculiar redness, may be easily mistaken for erysipelas.

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6. In this class of diseases there is absence of both general and local reaction. Sensibility is blunted. There is neither burning nor itching. Even the deeper tissues and the bones may be invaded without giving rise to severe pain, or any sign of reaction. There is not any nocturnal pains, which are pathognomonic of the osseous lesion of specific origin.

7. The healing of the scrofulides is provokingly slow, and is always marked by permanent cicatrization, even when there has been no ulceration, or no cutaneous solution of continuity. At first the scars are of a violet-reddish hue, but eventually they become white. These scars are not always depressed, but sometimes they form in elevations, irregular in outline and granulated; occasionally they become very similar to keloid.

Such are the more prominent pathological changes visible to the naked eye, as seen in the scrofulous lesions of the skin. The most marked peculiarity of them is a production of pus altogether out of proportion to the amount of inflammation. No other diathesis exhibits such a pus-forming tendency; and whenever, in non-strumous subjects, non-strumous diseases of the skin occur, there is generally an unusual exhibit of pus, absorption of tissue, and permanent cicatrization. This fact explains why some cases of acute eczema, psoriasis, etc., diseases not naturally pus-producing, are so untypical, and do not yield to routine treatment.

Examined histologically, the scrofulides present appearances to different microscopists that seem quite conflicting. One is reminded, in looking up the literature of this subject, of Hood's comical illustration in his "Whims and Oddities," of a hunter asking a group of men the question, "Which way went the hare?" and getting for answers, pointings in all directions. But these contradictory statements of pathologists arise from the fact that the various observers have failed to tell what variety and stage of the disease was examined, or in what part of the skin it was found. The appearances vary much, according to the variety, stage and location in the derma.

Some describe the morbid changes as a hyperplasia of the sebaceous glands (Rindfleisch, Veil, Virchow, Fœrster, etc.); others affirm that it consists in a general small cell infiltration (Neumann, Essig and Kaposi); others, that it is a hyperplasia of the malpighian layer (Berger, Pohl, etc.); others, that it consists in cell-heaps infiltrated in the coreum (Warren, Homolle, etc.); others intimate that it is peculiarly marked by giant cells (Friedlander, Lang, etc.); and so on. Probably each and all these histologists are correct, and would doubtless agree, were they to examine each the same specimens, from the same variety, in the same part of the skin, and in the same stage of the disease. At all events, it

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must be conceded that there is in the scrofulides a perversion of nutrition which is not at all uniform in its manifestation, but which shows variations from a small benign tubercle which undergoes slow degeneration, sloughs away, and leaves the patient in average good health, down to a regular epithelioma of malignant and incurable type. Struma, tubercle, lupus, each seems to belong to the same type of mal-nutrition, that arises from sources oftentimes quite independent of any specific constitutional contagion or inheritance. What causes this perversion of nutrition is, as yet, undiscovered. The perplexities that cluster around the subject of an hypothetical identity of struma, lupus and tubercle, are many and great, but it is not in the scope of this paper to examine them. Perhaps, ere long, the persistent scrutiny of science will fully remove them.

THE SYPHILIDES.

These disorders, like those of struma, have their origin in a perversion of nutrition. But the cause of the perversion in the syphilides can be distinctly traced. It is conveyed to the body by infection, exhibiting its presence first in the lymphatic system, and penetrating every tissue of the body in a way peculiar to itself. From beginning to end, there is a poisoning of the blood; and it is the presence of that poisoning which gives rise to all the trophic disturbances. Not an organ, nor a tissue of the body escapes the infective power of the specific poison. Even nerve structure and nerve centers are affected, as well as skin, mucous surfaces, glands, and bones; degenerative changes being produced in the very protoplasm of nerve cells and the intercellular nerve tissue. Such a universal contaminator of the bodily structures must needs produce peculiar visible appearances. And they do. The syphilides are marked:

1. *By a peculiarity of color.* It is *sui generis*. It is unlike anything else. It has been likened to the tint of copper, of raw ham, and other things, but nothing exactly resembles it; copperoid comes as near to the color as anything else. It needs to be seen to be correctly known. It is not counterfeited by any other disease, except to careless observers, who are more or less color-blind. A hasty glance might confound it with the color of lupus and lichen in some cases. But it should be remembered that this peculiar color is not at once manifested. The early eruptions of the scrofulides are only erythematous at first.

2. *The configuration* of the syphilides is noteworthy. Specific eruptions are roundish, oval, or annular; and, when grouped, are found to preserve a circular arrangement, healing centrally, and extending centrifugally. This sign is not always to be relied upon, unless accompanied

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by others; for herpes, lichen and lupus sometimes may present a circular configuration.

3. *Polymorphism.* After the first appearance of syphilitic maculæ, there is generally a co-existence of rashes, papules, vesicles, scales, pustules and crusts. Other affections of the skin do not exhibit such a polymorphism. Eczema and scabies exhibit, to some degree, a variety of appearances, but they can usually be traced to mechanical irritation. At any rate, the scrofulides do not present this marked polymorphism.

4. *Syphilitic ulcerations* are also very unlike the strumous. Their form is roundish, their edges abrupt, their color grayish, their floors pultaceous and glistening, and the skin around them is of a copperoid color.

5. *Mucous patches.* These, ere long, accompany or follow syphilitic maculæ. Their presence is pathognomonic. Their favorite haunts are the mouth, the throat, the nose, the vulva, the arms, etc. In infants, they are usually located about the buttocks, and need not be at all confounded with the erythema and excoriations that are common among infants whose cleanliness is neglected.

6. *The products of syphilitic eruptions* deserve special notice. They are scales and crusts. The scales are finer, smaller, and generally more adherent than those of non-specific squamous disorders; and the scaly patches are surrounded by a whitish border. Some dermatologists attach great importance to this border. The crusts, too, of the syphilides are harder, thicker, and greener than the crusts of other skin diseases. Very often they are as thick as they are broad.

7. *Cicatrization.* The scars of the syphilides are at first of a violet hue; then they change into a tawny brown, and finally become a perfect white, and reticulated. They are not so irregular and disfiguring as the scars of the scrofulides, and only the openly ulcerative forms produce scars, while the scrofulides produce scars whether openly ulcerative or not.

Other visible appearances of the syphilides might be mentioned, such as location, absence of local reaction, etc., but as they pertain alike to the scrofulides as well, they may be properly ignored. It should be stated that but little reliance can be placed upon any single sign or symptom, taken separately, but when combined with each other they show a pathology greatly diverse from that of the scrofulides, even from a superficial point of view.

When we study more closely, by the microscope, the pathological changes that occur in the syphilides, science intimates in the latest investigations, that there is something in them which is not present in

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other skin lesions. The elementary changes of the syphilides seem to consist of a development of small round cells, constituting what Virchow denominates "granulation tissue," which is mingled with the newly-formed connective tissue. Of these cells, the earlier ones are short-lived, and exhibit but little tendency to organization, and soon disappear, probably by absorption. The later cells terminate commonly in ulceration and suppuration. These specific cells vary in number and proportion, and thus give different manifestations in the different syphilides. Still, the histological character of all the varieties is substantially the same.

Barensprung, Robin and Wagner, each affirm that they have discovered the specific elements which are supposed to exist in syphilitic lesions. Wagner designates these cells as syphiloma. They are from $\frac{1}{150}$ to $\frac{1}{300}$ of an inch in diameter, and are granular in contents. This seems to coincide with Virchow's granulation tissue. "These cells," says Wagner, "are found almost everywhere in an infected person; in the skin, the mucous membranes, the liver, the lungs, the spleen, the bones, the brain, etc., etc." Wagner's alleged discovery needs further confirmation. If it should be demonstrated, all doubt would be removed.

Later investigations in this country with the microscope tend to establish the idea that the pathology of the syphilides is emphatically *sui generis*. While in the very beginnings of these and the scrofulides there is no appreciable difference, in respect to cell appearances, yet in the later developments there are well defined differences. Besides this fact, it is found that there are specific differences in the blood itself. Dr. J. H. Salisbury of Ohio, and Dr. E. Cutter of Massachusetts, have separately discovered that, while the red blood corpuscles are unaltered in syphilitic patients, the white ones are enlarged and distended by intercellular vegetations, the spores of which are copper-colored. The color is distinguishable by the helio-microscope. In the serum, also, of such patients, there are also found myceliate filaments, which are copper-colored and blunted at their ends. But while the white discs of the blood of strumous patients are enlarged, and show fibrin and mycelial filaments, they do not reveal a copper color—thus showing a certain something not common to the two diatheses in the blood, from whence nutrition and mal-nutrition arise. Dr. H. R. Storer says that it is possible to diagnosticate between syphilis and struma by means of the microscope, thus corroborating the above. Dr. Lostorfer of Germany, who, seven or eight years ago, aroused great interest in this subject among microscopists, also claimed to be able to diagnosticate syphilis by examining the blood. Prof. Stricker tested him by a hundred specimens, and he correctly diagnosed all save twenty doubtful cases. He based his decis-

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ions on the presence of certain peculiar bodies in the blood, which he called "syphilitic corpuscles." But subsequent researches by Dr. Kœbner, Stricker and others, have proved that these bodies are not necessarily due to syphilis, but to a general impairment of nutrition common in many disorders besides those that are syphilitic. Dr. Bumstead also says that he has never been able to find anything in the blood corresponding to Prof. Salisbury's alleged discovery of what he styled "crypta syphilitica," about the same time that Dr. Losterfer made known the results of his researches.

But, while little reliance can be placed on the first alleged discoveries of Lostorfer or Salisbury, the later revelations of the helio-microscope certainly proclaim the presence of a certain something not yet corporeally defined, but hinted at only through pigmentation, which is not exhibited in the blood of any other disease.

A few additional considerations may be presented:

1. Similarity of pathological appearances in various lesions during the first stages is no proof of identity of origin. It is found that the first cells of tubercle, syphilis, cancer, bronchial catarrh, and the products of inflammation, are always identical. If, then, the first two mentioned be therefore of one common origin, then the rest must be. Consequently, all the race must be syphilitic, because all suffer at one time or other with bronchial catarrh, or some sort of inflammation. We must not jump at conclusions from a few microscopic data. The microscope, telltale that it is, does not at once reveal all. Not by germination, but "by their fruits ye shall know them," is as true of pathological cells and protoplasm, as it is in the vegetable or moral world. We must wait further developments.

2. *The scrofulous diathesis* may and does arise among the healthy, according to the best pathologists, by reason of anti-hygienic influences alone, without any, the least admixture of specific taint. Dampness, darkness, foul air, bad and insufficient food, readily, of themselves, originate the strumous condition.

3. *The argument from antiquity* helps to establish a diverse pathology. Scrofula is a very ancient disease. Syphilis is a comparatively modern one, dating back definitely to the latter part of the fifteenth century, at least so far as Europe is concerned. Charles VIII. is said to have brought it to France from Naples through his soldiers, in A. D. 1480. If scrofula were a consequent of syphilis it could not appear antecedently, as it did ages before syphilis was known. A consequent cannot antedate its antecedent. It is absurd to suppose that scrofula could be transmitted from the East, the cradle of nations, centuries before syphilis

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appeared, when we consider the commerce of the Mediterranean and the habits of sailors who traversed that sea. It may be that syphilis existed before licentious Greece rotted into ruin. It may be that the disease called Job's disease by the Phillipine Islanders was specific, though having no possible tracing to the patriarch of Mesopotamia. It may be, too, that the syphilitic bones found in certain caves are very ancient; all of which suppositions are exceedingly problematical. Yet, even if scrofula and syphilis were co-existent from the first, that fact would not prove their identity of origin any more than the co-existence of rheumatism and alopicia and erysipelas would prove identity of origin. *Post hoc* and *cum hoc* are not *propter hoc*.

4. If scrofula be only an expression of specific infection, strumous persons ought to be freer than others from that infection; but they are not. In fact, the strumous diathesis seems to aggravate all the symptoms of specific infection.

5. If children born scrofulous are really syphilitic, they should show indications of constitutional perversion in the peculiar peg-shaped and notched teeth, so common in inherited syphilis; but they do not. They have defective teeth, but they are not of the specific type.

6. There are many adult persons of the strumous diathesis, but nearly all who are constitutionally tainted with syphilis die in utero, and of those who survive birth, but few live many years. Nature evidently protects the race from universal infection, by the rapid extinction of the infected. There is, in the long run, only the survival of the fittest. And yet the number of persons constitutionally affected with scrofula is legion, when it ought to be few, provided struma is only an evidence of specific taint.

7. The scrofulides and syphilides do not generally respond to the same treatment. So far as there is a general cachexia in either case, tonics and carbonaceous foods are required. But when you approach the cutaneous lesions, sad havoc will be often produced, and most mortifying failures, if you treat both classes of disease alike. An instructive illustration of this fact may be seen in the American Journal of Medical Sciences, for January, 1879. The case was one of late development of inherited syphilis, but had been long treated as lupus, only to produce fearful disfigurement of face for life. It was soon cured by a specific course of internal medication. Multitudes of similar cases show that the *materies morbi* of strumous skin lesions are widely different from that of specific ones. The improvement of certain cases, under each

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class, by the same mode of treatment, would suggest the co-existence of both disorders.

Take all the foregoing considerations together, and the conclusion must be that the scrofulides and the syphilides are not pathologically identical. In taking this position, we admit with Hey, Hufeland, Bertin and others, that constitutional syphilis may give rise to struma, phthisis pulmonalis, tuberculoses, and other perversions of nutrition, but, after all, there evidently is in specific diseases a poison which is unlike that of these other diseases.

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ARTICLE X.

DIPHTHERIA.

BY GEO D. WILBER, M. D., OF MINERAL POINT, CHAIRMAN OF THE COMMITTEE ON PATHOLOGY.*

If an apology be necessary for adding another drop to the flood of literature already issued, and still flowing from the teeming press, on the subject of diphtheria, it may be found in the fact that, notwithstanding all that has been so well said and so ably written, medical opinion is still unsettled on several important points concerning the disease which still stalks abroad, and ever and anon makes sad havoc with the innocents. Hence, as tending to the elucidation and final settlement of opinion on this important subject, the writer ventures to add his mite, however small, in the belief that it is the duty of physicians to contribute to the common stock of medical knowledge, by giving the fruits of their studies and observations.

Although diphtheria has doubtless existed from time immemorial, and has prevailed at different times and places as a pestilential epidemic, under a variety of names, it remained for Bretonneau, some sixty years

*[NOTE.—In obedience to the obvious desire of the Society that her essayists save all possible space, not only the bibliography and history of diphtheria have been omitted from this paper, but also all direct citations and references. This is to be regretted, both on account of the consequent difficulty of verification, and because justice demands the rendering unto Cæsar the things that are Cæsar's. This has greater pertinence, from the fact that the writer has freely drawn on so much of the extended literature of the subject, contained in treatises and scattered through medical journals for the past twenty years, as was accessible to him. Only an outline of the therapeutics is given, its fuller consideration falling within the jurisdiction of the Committee on Practice. Several points are wholly omitted; others are barely touched; while the etiology, pathology, and symptoms receive a fuller, albeit a very incomplete treatment. Indeed, an exhaustive statement of the natural history of diphtheria, including, as it must, the histories of its complicating diseases, and of its sequelæ, would far transcend the limits conceded to the report of a committee. Hence, the most that the writer could hope to accomplish was to present a kind of bird's eye view of the subject, by selecting a framework from the mass of material before him, and, drawing the distinctive features of diphtheria on his canvas, to work in the shades from the colors of his own experience, and thus to paint a more or less vivid picture of the disease.—G. D. W.]

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ago, to be the first to accurately investigate the nature of the disease, discern its characteristic phenomena, and fix its name from one of its leading features, namely, the false membrane formed on the mucous membrane of the affected parts. He at first regarded it as a specific, infectious, local disease, mainly characterized by the formation of false membrane on the surface of the affected mucous membranes, and by more or less marked symptoms of general depression, which he finally admitted might be attributable to constitutional infection.

He also believed that in their essential nature, croup and diphtheria are one and the same disease, differing only in location and degrees of intensity.

Many able investigators have more recently pursued the same line of research, and have laid greater stress on the general affection, as well as on some of the secondary disorders attending, and other remarkable derangements following the disease. The conclusions of some of these will be considered, as different points are successively brought in review.

THE ETIOLOGY

Of diphtheria, notwithstanding all the light recently thrown upon the subject by many brilliant efforts, still remains obscure in some of its parts. So long as this obscurity continues, doubts and diversity of opinions are inevitable concerning other points in the natural history of the disease.

By common consent, the causes of the disease are regarded as both special or exciting, and general or predisposing. If there be any who deny its contagious or infectious character, they are few, for most physicians believe that the exciting cause of the disease is a specific contagium, however this may originate, or whatever its physical qualities may be. Still, it must be admitted that all attempts to isolate it, to define its intimate nature, and to say exactly what it is, have thus far failed. Even the manner in which it enters the body, and the exact period of its incubation, have not been definitely settled.

Elaborate investigations have been made by Oertel and others, to ascertain the nature of the diphtheritic virus, and to determine not only its relations with the general disease, but also the relations of the latter with the local affection. By experimenting on inferior animals, mostly on rabbits, and reasoning from these to man, they have felt warranted in announcing the doctrine, that the exciting cause, the specific contagium of diphtheria, is the presence in the system, or on the affected parts, of certain vegetable organisms, fungi, called bacteria. The particular form or species of bacteria so potent for mischief, has not been agreed upon by the advocates of the doctrine, some claiming the distinction for the

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micrococcus, another for the *leptothrix baccalis*, and another for the *zygodesmus fuscus*; but Oertel approvingly cites Eberth's dictum, that *without micrococci there can be no diphtheria.*

The usual mode of procedure in the experiments was to inoculate the animals with the false membrane or other diseased products or tissues. When the muscles were thus inoculated, a specific inflammation was frequently induced, a fibrinous deposit formed on the edges of the wound, and death, apparently from general blood-poisoning, ensued within two days. Sometimes, when the mucous membrane of the throat and air passages was irritated with like material, a false membrane resembling the diphtheritic, was formed on the irritated parts; symptoms of general infection set in, and the animals died on the second or third days, showing after death marked renal disease. Keratitis was also induced by direct inoculation of the cornea, followed by general infection, and death about the fifth day.

From his experiments and reasoning, Oertel believed that diphtheria is always a specific local disease at its inception, and that the contagium first fixes itself at the inoculated point, and radiates thence, as a center of infection, to all parts of the system. In other words, that whenever the diphtheritic infecting agent takes effect on any part of the body, it there attaches itself and excites a local infectious affection, that only gradually becomes general, as the local contagium gradually spreads throughout the system. He argues, that if diphtheria be in fact a general infectious disease from the first, characterized by secondary local lesions in the throat and air passages, just as the acknowledged general infectious diseases present their characteristic pathological changes always in certain localities, then diphtheria, especially when excited by inoculation, should, of course, always become localized secondarily upon the mucous membrane of the throat and air-tubes after general infection.

Besides these experiments on animals, cases have occurred in man in which the disease was contracted by accidental inoculation, as by contact of denuded surfaces with diphtheritic products, and also by the contact of the latter with healthy mucous membrane. In all these cases, however, the subjects having been also exposed to the disease in other ways, the latter source of infection must not be wholly ignored.

On the other hand, many trustworthy observers have obtained adverse or negative results from the same and like experiments. Thus, Trousseau made the crucial experiment of inoculating himself and others with diphtheritic membrane without inducing the disease. Furthermore, if all experiments of ingrafting diphtheritic products had been followed by a disease resembling diphtheria, with the development of bacteria in the wound and throughout the body, attended by various secondary

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affections of different organs, especially of the kidneys, even then it would not follow that bacteria constitutes the essential initial factor, the *sine qua non* of the disease. When rabbits are inoculated with any necrotic matter, or even with scrapings from the dorsum of a healthy human tongue, a train of symptoms may be developed resembling those following diphtheritic inoculations.

Beale has shown that millions of vegetable germs, and among them those of bacteria, are normally present in the mouth and alimentary canal of man and the higher animals; and it is probable that those germs constantly pervade their entire organisms. Seeing, then, that these germs are ever present at the ordinary sites of diphtheria, it devolves upon the bacterial theorists to explain why the omnipresent bacteria are generally so innocuous and exceptionally so potent in causing the disease, and why the bacteria do not always multiply indefinitely, and by blocking the circulation, uniformly destroy life, and render human existence impossible? This task has never been performed.

Except to support a foregone conclusion, no valid reason appears why the rapid deaths reported from necro-diphtheritic inoculations should be ascribed to the multiplication of bacteria, rather than directly to septicæmia, the known result of septic inoculations. That bacteria, or other microscopic organisms, may be the carriers of the subtler contagium, or by their increased numbers excite a special diseased action, may be freely admitted; but that the micrococcus, bacterium termo, leptothrix buccalis, or any other organism thus far named for the honor, is either such carrier or the identical contagium, remains far from proven. Oertel himself admits that his doctrine has not been demonstrated clinically or on the cadaver, and relies for its confirmation upon experiments on animals. But analogies from the lower animals, or from any source that cannot be applied and verified at the bedside, should be accepted only with the utmost caution.

Should the diphtheritic contagium ever be isolated, it is likely to be found to consist of impalpable particles of matter, perhaps minute organisms, capable of floating in air and adhering to walls, clothing, etc., until, finding a proper nidus, it develops into the disease. Such contagium may act directly on the system, inducing the general symptoms and local manifestations after the manner of the specific fevers, or if consisting of organisms, these may multiply indefinitely in the affected parts, there obstruct the capillary circulation, and by either mechanical or vital irritation, or both, cause a primary local inflammation, with which the whole system sympathizes.

Whatever be the truth as to the ultimate nature of the contagium, it exhibits at times a wondrous vitality. It has seemed to persist external

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to the body, for months and years, and then to excite the disease. Its ordinary period of incubation is from two to five days, yet this may be delayed for days, even weeks. Still, the apparently persistent vitality of the contagium and its seemingly prolonged incubation, may, after all, be delusive; because, despite the utmost care, it is rare that every chance of possible accidental infection has been rigorously excluded. This consideration has the greater force, when it is remembered that sporadic cases frequently arise, widely separated from any other case, or from any known source of contagion, and which defy all efforts to trace the contagium. The impossibility of tracing the contagium in certain instances to a previous case, together with an assumed potential power of epidemic, endemic and other imperfectly known influences to cause disease, has led to the belief in the spontaneous origin of the disease. Against this belief it may be urged that if diphtheria belong to the class of contagious zymotic diseases, as is generally admitted, the same reasoning that would give it a spontaneous origin, would give a like origin to the whole class; for, as with diphtheria, so with small-pox, measles, etc., cases occur in which the source of the contagium can not be traced, yet no one holds to the spontaneous origin of these; still, as in the history of each contagious disease, there must have been a first case, originating independently of preformed human contagium, it is not intrinsically improbable that a concurrence of causes sufficing to induce a first case, may at any time induce another case *de novo*. However, as those conditions are not understood, and it is unknown in what manner diphtheria was first developed, whether from without, in foul air, impure water, defective drainage, or bad sanitation in any of its details, or from a miasm developed within the body independently of its environments, or from both, or otherwise, it comports best with reason and experience to ascribe doubtful cases, widely separated from known sources of contagion, to a cause adequate to induce it, namely, a specific contagium.

There are several modes in which the contagium may enter the system; as, by and through the atmospheric air, the fluids imbibed and the food eaten, by innoculation, and, perhaps, by direct implantation. The exhalations and excretions of the affected may in various ways contaminate the air, the water and the food with the germs of the disease, and these thus find ready access to the body by the mucous membranes, especially of the digestive tract and air passages. In many cases of diphtheria direct observation has revealed that the drinking water was contaminated with excrementitious matter; and it is claimed that diphtheria is especially a filth disease. This seems to be true to the extent only, that those subjected to the deleterious and enervating effects of filth and its usual concomitants, are thereby rendered more ready victims of the whole class

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of contagious diseases; and that under these conditions, the germs of the disease more certainly linger about to excite the disease from time to time. When the disease is traceable to impure water, it should be remembered that typhoid fever has been thus traced, and the germs of the disease found in the water, and that the contagium of diphtheria has been thus carried in such cases is highly probable. In short, it is not known that the worst sanitary conditions, by themselves alone, has ever caused the disease, or that the best hygienic regulations can prevent its approach.

In its visitations diphtheria is no respecter of persons or condition in life. It attacks the noble and the lowly, the rich and the poor, the virtuous and the vicious, and invades mansion and hut, leaping all barriers to seize bright victims in palaces, while passing unharmed cheerless children of the dirt. Nevertheless, it must be true that those most nearly in perfect health, whatever their social state, are least liable to contract the disease, for those laboring under either of the eruptive fevers or recently convalescent therefrom, and those debilitated from any cause, are peculiarly susceptible to the contagium and prone to suffer from the disease in a severe form. Indeed, the mortality among such cases is frequently frightful. The presence of simple catarrh affords a good nidus for the germs, especially during an epidemic tendency of the disease.

The common *habitat* of diphtheria is the temperate zone, and although occurring in most countries, climate exerts no marked influence on its prevalence. In England, the disease occurs much more frequently in the country than in the cities, the rate of mortality being three times greater in the rural than in the urban districts. Whether this remarkable difference is due to the greater moisture of country air, more defective drainage, or other unknown conditions, has not been ascertained. It has been suggested, however, that the conditions favorable to fungoid growths in general, especially humidity of the atmosphere, also promote the occurrence and persistence of diphtheria, and that city air, generally being drier, and containing certain impalpable substances inimical to the vitality of the contagium, becomes a less eligible vehicle for its propagation, hence the greater immunity of cities from the disease.

Although it is denied that the prevalence of the disease is influenced by the seasons, British statistics show more cases in winter than during any other season. Owing to the paucity of statistics in the United States, no deductions can be drawn on this point from the whole country; but Boston, with a population of 300,000, reported 1370 cases and 450 deaths from diphtheria, during 1878; or 33 per cent. of all cases died. Between our and five times more cases occurred in the winter and early spring

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months, than during the same number of late summer and early fall months. The maximum, 241, was in January, with 58 deaths, and the minimum, 45 cases, in August, with 23 deaths. Thus, in Boston, it appears that while from four to five times more cases occurred in winter than in summer, the total mortality was only double; showing that although the liability to the disease was over fourfold in winter, the cases were less fatal, the rate of mortality to cases being 25 per cent. In summer, on the other hand, with less than a fourth of the liability to the disease, the total deaths were half those of winter, the rate of mortality to cases being 50 per cent. Should further statistics corroborate the foregoing, it will then appear that the conditions incident to cold weather favor the spread of the disease; and that hot weather conduces to a higher rate of mortality.

Statistics of 70,000 deaths from the disease, derived from the reports of the Registrar General of England, show that diphtheria is peculiarly a disease of childhood, 89 per cent. having died under 15 years of age, and only 11 per cent. after that age. The deaths were thus distributed: During the first year of life, 9 per cent.; between 1 and 5, 45 per cent.; between 5 and 10, 26 per cent.; between 10 and 15, 9 per cent.; between 15 and 25, 5 per cent.; between 25 and 45, 3.5 per cent.; and from 45 upwards, 2.5 per cent.; or nearly half between 1 and 5, and over seven-tenths between 1 and 10.

Contrary to the general belief, the writer has repeatedly seen the disease in children at the breast; and the foregoing statistics show that 9 per cent. perish under a year old.

Family susceptibility has been ranked next in importance to age as a predisposing cause of the disease; and although many cases have been cited, tending to show such susceptibility, its existence has not been indubitably proven.

In some of the earlier cases of diphtheria seen by the writer, he observed a distinct rash closely resembling that of scarlatina, except that it was not followed by desquamation; and from this and other resemblances of the disease to the eruptive fevers, he was led to infer that as the latter afford immunity against their recurrence in the same persons for varying periods of time, so diphtheria probably affords a like immunity. The inference has been verified by experience; only the immunity is much briefer than with small-pox, scarlet fever, or measles, although longer than with rœtheln (rubeola, or German measles). The exact period of the protective influence of diphtheria, as with each of the other specific contagious diseases, is not known. The writer has seen the disease recur repeatedly, in one patient, at the very short intervals of a month; yet as even variola has occurred as many as three times in the same per-

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son, though at longer intervals, the occasional recurrence of diphtheria does not invalidate the argument for its general protective influence.

In our day, diphtheria is rarely, if ever, wholly absent from large cities or densely populated country districts, as a sporadic or endemic disease From these solitary cases,—probably as centres of contagion, possibly in other ways,—the disease frequently creeps from family to family, and from neighborhood to settlement, thus gradually spreading over whole districts as an endemic, and then as gradually disappearing. At long and wholly uncertain intervals, under the influence of wide-spread occult causes, the disease suddenly invades wide tracts of territory, prevails as an epidemic scourge for an indefinite period, and then vanishes as mysteriously as it came.

PATHOLOGY AND SYMPTOMS.

Whether occurring sporadically, or prevailing as an epidemic, diphtheria presents itself, either primarily as an independent original disease, or secondarily, as a complication of diseases already in progress, as measles, scarlet fever, etc. In either case, it is both a general and a local disease, characterized by well defined symptoms, and is accompanied and followed in about half of the cases, by various secondary troubles, chiefly paralysis.

As has been shown, it remains an open question which is the primary affection, the local or the general disease? The final settlement of this question involves the still broader questions of the genesis of all kinds of fever, and of the febrile and other general symptoms of the specific contagious diseases in particular. If the general symptoms in these could properly be ascribed to the irritation of local diseased processes, as in simple inflammation, then possibly the constitutional disturbances constituting the general disease in diphtheria, might arise from a local disease already established. This postulate is denied by sound pathologists, who claim that both the increased temperature, etc., and the local disease, are directly referable to the general infection. Doubtless most physicians experienced in diphtheria have repeatedly seen cases in which there were marked constitutional disturbances, hours before any distinct local disease was discernable on the closest examination. Nay, more exceptionally, cases run their entire course, without the appearance of local disease at all adequate to explain the severity of the symptoms, even had the general symptoms been developed from the local disease.

As clinically observed, then, diphtheria is to be regarded as a specific, contagious and infectious disease, always affecting the whole system, generally manifesting itself as a specific local inflammation of the

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mucous membrane of the fauces, pharynx, etc., and frequently of the larynx and trachea. In different cases, the disease exhibits varying degrees of intensity, from its mildest form, resembling simple catarrh of the throat, to the most malignant, with signs of profound blood-poisoning.

As a general disease, at the outset, diphtheria presents symptoms common to the specific fevers, varying in number and severity with each case. As a local affection, it has distinctive peculiarities, sufficient to mark it as a disease *sui generis*, notably, the formation of the false membrane, recognized as the distinguishing local characteristic of the disease.

For convenience of description, the disease may be considered as divisible into different forms, each representing a certain group of symptoms and local conditions, more or less sharply defined and clinically separable. Thus have been distinguished five or more forms, viz.: 1, *the mild, or catarrhal;* 2, *the typical;* 3, *the inflammatory, or croupous;* 4, *the septic, or malignant;* 5, *the gangrenous.* This division is not based on fundamental differences, but represents degrees of severity of one and the same disease, induced by a multiplicity of modifying circumstances. During epidemics, and sporadically, cases frequently occur presenting during their progress some of the peculiarities of two or more forms, rendering it impossible to class them under either form of the disease; or, a case may set in with the features of one form, rapidly change its character, and soon assume another form.

The mildest form of diphtheria is hardly distinguishable from simple catarrhal inflammation of the throat. The general symptoms and the local manifestations are usually so insignificant that the cases, if occurring independently of any known source of contagion, might merit and probably would receive little or no attention. But the constant liability of the mild form of the disease to develop into the more serious, and the never absent danger of the mildest case becoming a centre of contagion for the diffusion of diphtheria in all forms, invest this variety of the disease with additional interest, constituting in fact its chief elements of importance.

In *mild* or *catarrhal* diphtheria, there may be little or no thirst, fever or increased temperature, the maximum rise varying from one to four degrees; and when present, the face may be congested, the skin dry and hot to the touch, and the pulse increased in fullness and frequency. Subjective symptoms may be absent, but usually there is more or less headache, and a sense of *malaise*, which may increase to lassitude, heaviness or even to prostration. Exceptionally no complaint is made of the throat; generally there is dryness, a pricking or pain in swallowing, and occasionally heavy pains are referred to the throat externally. Rarely, nausea and vomiting are among the earliest symptoms. Sometimes the

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cervical and submaxillary glands become early affected, tender and swollen. Slight albuminuria has likewise been present in some cases during the course of the disease. Inspection of the mouth and fauces may reveal at first dryness and redness of the mucous membrane, soon followed by a more vivid hue, increased secretion, and isolated patches of a yellowish or grayish-white substance on one or both tonsils by preference, or on the arch of the palate or adjacent parts, with comparatively healthy mucous membrane intervening. This exudate may be detached without difficulty by a probang or otherwise. Occasionally, only the ordinary appearances of simple catarrhal inflammation are seen.

The constitutional disturbances in most cases, subside within the first twenty-four hours, and convalescence is established before the fifth day. During or after convalescence, a degree of muscular weakness supervenes in many cases not referable to the severity of the symptoms. This is the earlier stage or slighter form of the paralysis, caused by the diphtheritic poison; and when present, is an unerring sign of the disease.

Occasionally, even after marked betterment of all the symptoms, convalescence does not occur; and at the end of four or five days the disease is suddenly rekindled with increased severity, and a *typical form* of diphtheria develops. The constitutional disturbances become decidedly pronounced, and the local affections distinctly marked. There is a high fever, headache, with confusion of thought and perhaps delirium; hot and dry skin; urgent thirst; pulse accelerated to 120 or more per minute, without a proportionate increase of respiration; and a rise in temperature of from three to seven degrees. Frequently there is chilliness; severe pains in the back and loins, perhaps extending over the whole body; loss of appetite, perhaps also nausea, vomiting or diarrhœa, and sometimes a peculiar, distressing epigastric or abdominal pain. The neck may be painful, stiff, and, together with the glands, tender and swollen. Locally, there is increased hyperæmia, redness, dryness, and swelling of the mucous membrane, usually accompanied with pain or hyperesthesia and dysphagia; and inflammation spreads over the tonsils, fauces and pharynx, frequently involving the uvula, which becomes œdematous and much swollen. The latter, alone or conjoined with the tonsilitis, sometimes seriously interferes with deglutition. The inflamed mucous membrane is soon more or less continuously covered with false membrane, or diphtheritic exudation, which may likewise be infiltrated into the sub-epithelial tissues. The false membrane may acquire sufficient tenacity to be peeled off in strips or removed as casts of the parts it has covered; or it may remain soft, granular and brittle. The breath, unless repeatedly corrected by deodorizing disinfectants, is sometimes fetid, even unto stench, from decomposition of animal matter in the

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throat. Specific septicæmia may also occur, announced by great prostration, a peculiar, excited, yet feeble action of the heart, the pulse being exceptionally frequent or infrequent, and bearing no definite relation to the frequency of respiration. In a majority of cases, albuminuria is present at an early stage of the disease; the urine being scanty, high-colored, and loaded with granular, epithelial and hyaline casts. Later, a state of restless wakefulnes, especially by night, may harass the patients.

In favorable cases, the body heat usually falls to normal on the fourth or fifth day, perhaps while the false membrane is still forming. In other cases, the heat may persist and will probably increase with the renewed local activity. In the latter case, there is imminent danger of invasion of the larynx and trachea by the disease, and of the development of that most dreaded complication, *laryngo-tracheal* diphtheria, otherwise called *membranous croup*. This declares itself by a changed, hoarse or half-suppressed voice, a dry ringing cough, labored breathing, increasing to distressing dyspnœa, puffiness of the eyes and face, gradual asphyxia from mechanical obstruction, stupor, and, too often, coma and death. The disease may extend along the trachea to the lungs, block the smaller bronchial tubes with croupous exudation, and cause so-called suffocative bronchitis, a uniformly fatal affection. Another complication, of less importance, although of bad omen, is extension of the disease to the nasal cavities, with accompanying epistaxis, that may be repeated and fatal. A thin, brownish, fetid, ichorous discharge, excoriating the tissues over which it flows, announces the invasion, and the nostrils may be completely blocked at intervals with fibrinous plugs, very annoying to patients and not easily removed. The lachrymal duct may thus be occluded, or from extension of the disease, which may thus reach the conjunctiva. In either case, epiphora results. Quite rarely the disease steals along the Eustachian tube to the middle ear, affecting its lining membrane, which pours out a purulent fluid, that only finds vent through a perforation in the membrana tympani, induced by the pressure.

Should these complications be happily avoided, or safely passed through, other dangers await; for relapses may occur, with a return of the worst symptoms, and death may ensue from syncope, from paralysis of the heart, very rarely from paralysis of the muscles of deglutition, or from secondary blood-poisoning by coma. These dangers passed, there remains the liability to the various paralyses usually induced by the diphtheritic poison, and these may persist from a month to one or two years.

When the disease runs a favorable course, on or about the eighth day the urgent symptoms begin to subside; the exudation no longer spreads,

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but gradually loosens and moults, exposing the mucous membrane progressively resuming its normal appearance. The pulse abates in frequency, the temperature becomes normal, the appetite improves, the urine gradually assumes its natural color and qualities, and save for the danger of relapse or extension, little more than weakness or partial paralysis would remain to annoy the patient.

It is to be understood that severe or typical diphtheria may not only be developed out of the mild form of the disease, but also that it ordinarily occurs as the primary affection, presenting the same characteristics and tendencies as above described. In like manner may the still more serious forms of the disease be either primary, or secondary to the milder, and each of the varieties of diphtheria is often seen in practice, overlapping or shading into another.

In so called *croupous* or *inflammatory* diphtheria, the general symptoms set in at a still higher pitch of intensity than in the typical, and the local hyperæmia, swelling, inflammation, characteristic false membrane, etc., are more prominently marked than in any other form of the disease. Briefly recapitulated, the constitutional disturbance is shown by a sudden rise of temperature of from five to seven degrees, and an extremely frequent pulse, which may have been preceded by chilliness, but not by distinct rigors, as in many eruptive fevers; perhaps repeated vomiting or diarrhœa; hot and dry skin, with increased thirst; restlessness or drowsiness bordering on stupor; pains in the head, neck, throat, back, loins, epigastrium, abdomen, or elsewhere, and a feeling of debility or muscular weakness. Children are apt to be delirious by night, at which time the fever reaches its highest pitch, and convulsions are liable to occur. Occasionally, no complaint is made of the throat, but usually there is a sensation of dryness, burning or pain, increased by swallowing. The submaxillary glands, and the cervical that are in direct connection with the affected mucous membrane, do not fail to become tender, hard and swollen, just in proportion to the severity of the local mischief, and, together with the surrounding connective tissue, may be the seat of diphtheritic infiltration. Sometimes the mucous membrane of the throat is at first bright red, but usually it is livid or dark red, especially on the tonsils, palatine arch, and portions of the pharynx. These parts are the first to show signs of infiltration, which soon involves the mucous membrane and sub-mucous tissues, and causes marked swelling of all the affected organs. The characteristic false membrane, which, by its qualities and abundance, constitutes the distinguishing feature of this form of the disease, usually appears within the first few hours, although rarely is delayed to the third or fourth day. In most cases, it is possible to see that in the earlier stage the yellowish-colored patches first to appear are

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infiltrations *into*, and not upon, the mucous membrane, and that the false membrane itself is not formed for many hours afterward. Indeed, it is held by able pathologists that the false membrane, the croupous substance, is never an exudation *upon* mucous surfaces, but is, in fact, primarily a metamorphosis of the epithelium, called croupous metamorphosis. According to this view, croupous membrane, or exudation, is a peculiar metamorphosis of the epithelial layer of mucous membranes, while pure diphtheritic exudation in a severe form, although also croupous, is mainly an infiltration involving the sub-epithelial tissues. The two may co-exist in all shades of transition, or occur separately. In neither case will there be true fibrinous exudation upon the inflamed surfaces, unless a breach of continuity occurs in the superficial layers of mucous membrane. Yet, in most severe cases of diphtheria, whether presenting the leading features either of the typical or of the croupous form, there will be more or less fibrinous exudation, commingled with the croupous and so called pure diphtheritic exudations, during the course of the disease. The false membrane, when fully developed, assumes a leathery toughness, and is firmly attached. If forcibly removed, the mucous membrane, robbed of its epithelium, is exposed raw and bleeding, and of a yellowish or dark red color. Frequently, fibrinous exudation soon covers the denuded surface, and by solidifying, again forms another tough coating.

This form of the disease shows a special tendency to extend to the larynx and trachea, or to be there developed from original foci into that most fatal complication already mentioned, viz., membranous croup.

The progress of this form of the disease to its termination, is essentially similar to that already given for typical diphtheria; and except for the greater intensity of the disease and the marked tendency to the production of the false membrane, the two forms are not readily distinguishable clinically. It is to be mentioned, however, that the croupous or inflammatory form is sometimes accompanied by inflammation and swelling of the joints, and quite rarely by endocarditis or other cardiac disease. Also, it has appeared to several observers, the writer included, that albuminuria, with epithelial and hyaline casts, more frequently complicates this than any other form of the disease, indicating, when present, a high degree of general infection.

Malignant Diphtheria, whether occurring as a primary disease or as a septic complication of any other form, is announced, suddenly in the primary form and more gradually in the secondary, by symptoms of severe general infection: violent headache, vomiting, intense heat, rigors, very frequent weak pulse, little or no rise of temperature, and sometimes alarming hemorrhages from the nose or bowels. It is rare that any com-

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plaint is made of the throat, notwithstanding the all-pervading fetor of the breath from the rapid decomposition of animal matters therein. The tongue is tremulous, dry and brown, and the teeth are coated with sordes. The mucous membrane of the throat is of a dark purplish hue, or if the false membrane has formed, this has a grayish-brown color, is brittle, semi-solid and easily broken down. A dark, ichorous, offensive, corroding fluid flows from the mouth and, perhaps, the nostrils, and excoriates the skin wherever it touches.

When the symptoms indicate profound blood-poisoning at the onset, death may occur within two days, and is rarely deferred beyond the fourth day; but if the septicæmia be gradually developed, the fatal result may be postponed a fortnight. The cervical lymphathics become speedily involved, enormously swollen, and surrounded by œdematous swellings; the face puffed, pallid, and sodden; the pulse small, weak, irregular and very slow; the temperature, at first slightly raised, soon drops below normal; the strength rapidly fails; the appetite is lost, or constant nausea, with frequent vomiting set in, with the emesis and dejection of a dark, ichorous fluid, resembling muddy coffee. As the temperature falls, a clammy sweat covers the forehead and extremities. The patient may be restless at first, and finally delirious, or dull and drowsy, until coma supervenes.

Death usually results either from syncope, or perhaps from paralysis of the heart, induced by the virulence of the diphtheritic poison in the blood, acting either on the supreme cardiac nervous centre or on the nervous mechanism of the heart itself. Death seems to result occasionally from quite insignificant acts, as a quick movement. Even convalescents from any form of the disease sometimes die very suddenly, without apparent adequate cause, as from going up a flight of stairs, riding on horseback, etc. In *very* rare instances, cases have lingered on the extreme verge of life for weeks, and after protracted convalescence have been restored to health, although of a precarious character.

In the so-called *gangrenous form* of diphtheria recognized and described by writers, the physician is confronted with the worst result of intense inflammation of the affected parts rather than with a distinctive form of the disease. Mortification of the tissues directly involved occurs, and is quickly indicated by great prostration and collapse. The temperature suddenly falls, the surface becomes cool, then cold and clammy, and the pulse frequent and thready. The mind may remain clear, but the countenance has an anxious look, and an altered, pinched expression. Distinct chills may occur, and if life be prolonged yet a little while, septicæmia, metastatic inflammation and embolism of the internal viscera

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speedily occur, together with marked nervous symptoms and involuntary stools. Death by coma or syncope almost uniformly supervenes.

Numerous cases illustrative of a *chronic form* of diphtheria have been reported. The chief feature of the disease as described, was the presence and repeated formation of the false membrane, and the absence of all other symptoms save a little febrile disturbance occasionally. The cases were all able to go about and were not at all amenable to treatment, but uniformly recovered in about eight weeks, the extremes being seven and thirteen weeks.

Two very rare forms of diphtheria occurred endemically in Tunis from 1873 to 1877. All forms of the disease proved very fatal, and out of two hundred cases reported, one hundred and fifteen died. One of the rare forms of the disease was invasion of the vulva and vagina of young girls, followed by gangrene and death in five cases. In the other form, the disease generally attacked the last phalanx of the big toe, rarely of some other toe, and still more rarely of the left middle finger. Before the ordinary signs of diphtheria appeared, the affected member became red, then bluish, and then yellowish; fetid exudation escaped at the margin from beneath the nail, which was at the same time covered with a glistening material, of a yellowish-gray color. As the diphtheritic symptoms developed, the local affection assumed a gangrenous character; and all the patients thus affected, fifty in number, died—mostly within three or four days. It would be very difficult to explain these cases on the assumption of the local origin of the disease and its subsequent development into general diphtheria. On the contrary, they tend to prove that diphtheria is caused by a primary general infection, and that the general disease is not sympathetic of the local lesion, but is a primary affection.

Although five different forms of diphtheria have been outlined in the foregoing sketch, it is to be remarked that it is practically unimportant to observe the distinctions between them at the bedside. What the practitioner must determine is, whether or not the case before him is diphtheritic, and if yes, then whether mild or severe, and if severe, the tendency to become croupous, to invade the larynx or nose, or to assume a malignant type. Sometimes the disease is most insidious in its approach, and may take fatal hold of the patient before its presence is discovered. The two first cases seen and recognized by the writer, some twenty years ago, were of this character. The two became affected within three days of each other, and the disease was far advanced before its presence and nature were discovered. They were up and about much as usual; made no complaint whatever except of lassitude, and fever by night. Their appetites gradually failed, but there was no pain or difficulty in swallow-

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ing. After several days the fetor of the breath became marked, and, on examination, the fauces and pharynx were found covered by a brownish, shreddy false membrane already undergoing decomposition. Persistent nausea and vomiting soon set in with dejections of an ichorous fluid resembling muddy coffee, and signs of septic infection. Yet each case lingered about two weeks from the attack, and finally died from gradual asphyxia, apparently caused more from occlusion of the glottis by interstitial diphtheritic infiltration within the mucous membrane of the larynx and around it — which was very extensive — than from false membrane upon its surface.

Nowadays, no practitioner would hardly fail to examine the throat of any child patient with masked fever, at the earliest possible moment; and if evidence of diphtheria be found, especially of a severe form, he should not fail to examine the urine for albumen and the significant epithelial and hyaline casts. Concerning the true import of these, as high authorities differ, the following considerations seem worthy of attention.

It is held by some that inasmuch as *albuminuria* may be either present or absent in any form of the disease, its presence being observed in over fifty per cent. of all cases; and as it may come, and go, and come again, during the progress of a case, and as it is also present in several other diseases and may even occur exceptionally in comparative health, therefore no importance usually attaches to its presence in diphtheria. To this it may be answered, that while the premises may be true, the conclusion does not follow.

An essential point to consider in this connection, is the state or condition in which the albumen exists in the urine. A tangible amount of simple serum albumen may find its way into the urine by percolation, as it were, through the kidneys, in certain altered conditions of the blood, under variations of the blood-pressure, and, perhaps, also under some more or less transitory nervous influence. Such instances of albuminuria have no necessarily serious import. When, however, albuminuria shows itself early, or becomes prominently marked by an abundance of epithelial and hyaline casts during the progress of cases of diphtheria, and especially when the urine by heat and nitric acid drops from twenty to twenty-five per cent. of its bulk as an albuminous sediment, the writer has been led by experience to regard it as *prima facie* evidence of acute parenchymatous nephritis, presumably induced by the diphtheritic poison, and, owing to the intractable nature of this complication, as of bad augury in any case.

Diphtheria may run a seemingly favorable course, and convalescence be well nigh established, while diphtheritic nephritis may be complicat-

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ing the case unawares, and at the end of a month general anasarca may gradually steal on the patient, and life be extinguished by œdema of the lungs. The writer has seen several such cases, in one of which he secured an autopsy and verified the correctness of his diagnosis. This case, a boy nine years old, had a mild form of diphtheria, for which little medication was sought, a month before the appearance of the pulmonary œdema. When seen at the latter period, the urine was scanty, cloudy, loaded with epithelial, hyaline and granular casts, and dropped over a third of its bulk as an albuminous sediment. Dyspnœa was at first remittent, but became gradually persistent, and the patient died within a week, showing signs of intense œdema of the lungs, which condition was revealed at the autopsy. The kidneys were enlarged, of a light or yellowish-red color; the left kidney — the one specially examined — weighed four ounces avoirdupois. Under the knife there was increased resistence and tenacity, as if from chronic interstitial inflammation. On section the blood oozed from the cut surfaces, especially from numerous hemorrhagic points in the cortical portion. The Malpighian bodies were mostly obliterated, and blood was effused in patches throughout the interstitial spaces. The convoluted and smaller tubules, as well as many of the larger, were blocked by cylinders of epithelial and granular matter, closely resembling the casts observed in the urine during life. Many of the larger straight tubules were likewise blocked with continuous masses of globular bodies, micrococci. The inter-tubular spaces were filled with residual fibrinous matter, intermingled with micrococci, which were also observed in colonies in different parts of the cortex. If the presence of the micrococcus within an inflamed kidney be deemed conclusive proof of the diphtheritic origin and nature of the disease, no further evidence is needed on this point in the case just mentioned.

An examination of all reports of cases of diphtheria accessible to the writer, with a view to learn the frequency of albuminuria in fatal cases, discloses the fact, which can hardly be merely a curious coincidence, that in a very large majority of the deaths when the circumstance was noted, albuminuria was present during their course. The following conclusion, therefore, seems unavoidable, viz., that in all cases of diphtheria, albuminuria of a decided character, associated with distinct, hyaline, granular and epithelial casts, when the outward token of parenchymatous nephritis, as it usually is in diphtheria, must always be regarded with suspicion, if not with apprehension.

Another mooted question of undoubted practical importance, is that of the identity or duality of common membranous croup and diphtheria, but want of space compels a deference of its discussion to a more convenient season. It may be remarked, however, that if both affections

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be one in essence, too much care cannot be exercised in guarding the unaffected against the danger of infection from both forms of the disease; or, if the two be distinct, clinically separable diseases, arising and running their respective courses wholly independent of each other, the physician ought to know the truth and be governed accordingly; for if membranous croup be a simple inflammation, without a specific contagious character, no danger from infection to attendants or others need be feared. But if the two diseases, or forms of one disease, may occur simultaneously and consecutively, both endemically and epidemically, in such order and under such circumstances that either may be regarded as the center or source of contagion of the other—and that this does occur is abundantly attested by numerous witnesses—it seems unreasonable, to the writer, to deny the essential unity of the cause of both. Young Physic unquestionably accepts the doctrine of such unity, while many old practitioners and able pathologists insist that membranous croup *may* occur independently of contagion, although admitting the extreme rarity of such occurrence at the present day. An analysis of the points claimed to be distinctive and usually adduced to prove the duality of diphtheria and membranous croup, compared with his bedside experience, at least convinces the writer that he has yet to see his first case of undoubted idiopathic membranous croup. The genesis and nature of the false membrane itself is involved in the question of unity or duality. If there be an insensible gradation in the character of the false membrane, from the croupous to the undoubted diphtheritic, then the exuviation of the diphtheritic products, and the process of repair, will be essentially the same in each.

In favorable cases, when improvement in all the symptoms commences, which it usually does from the third to the ninth days, the false membrane ceases to spread, its borders become clearly defined and prominent, and its whole area increases in thickness from purulent infiltration within its substance and beneath its surface. Thus weakened and loosened, it is soon cast off in larger or smaller portions, and in from two to five days the mucous membrane, cleared of its false coating, presents an appearance perhaps indistinguishable from catarrhal inflammation, and gradually resumes its normal condition. The average duration of the disease is about two weeks, but very mild cases may be well in three days; while other cases, from relapses or original severity, may linger from three to six weeks before death takes place or convalescence is established.

One of the most remarkable features of diphtheria is the paralysis, partial or complete, of one or many muscles (attended in some cases by more or less anæsthesia), that generally becomes manifest either during

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the progress of the disease or before complete recovery. The muscles become affected in no definite order of sequence, although those of the soft palate and pharynx are most frequently the first affected, whereby the voice is modified to a nasal twang and deglutition impeded, rarely to the extent of endangering life from inanition, or from bronchial or pulmonary inflammation excited by foreign bodies that have slipped through the glottis in the act of swallowing; then those of the eye, causing strabismus and double vision; next, of the extremities, impairing or preventing locomotion, perhaps from loss of the power of co-ordination; sometimes of the larynx, causing patulousness of the glottis and relaxation of the vocal chords, with complete or partial aphonia; rarely of the chest, impeding respiration, whence cyanosis, asphyxia and fatal œdema of the lungs may result; and still more rarely, of the sphincters, causing involuntary stools and incontinence of urine. As already mentioned, the heart itself may likewise be paralyzed. These paralyses may occur singly, jointly, or consecutively; even general paralysis may supervene, and in the cases observed in adults anaphrodisia was likewise present.

About nine-tenths of all cases of diphtheritic ataxia ultimately recover entirely in varying periods of a month to two years, mostly within four months. The persistence of the paralysis is in proportion to its degree of severity; and the muscles first affected are usually the first to regain their contractility. A fraction of one per cent. never fully recover, and near ten per cent. die from the direct or indirect effect of the paralysis.

Erb thinks the probable cause of diphtheritic ataxia is a sclerosis of the posterior columns of the cord; but alludes to an acute ascending paralysis, which has also been observed by others, commencing in the lower extremities and successively involving the trunk, superior extremities and medulla oblongata, without leaving an anatomical trace behind. Brown-Sequard places the ataxia among the reflex paralyses, and ascribes it to contraction of the blood-vessels in the nerve centres and in the motor nerves and muscles. Gubler arranged the phenomena into two groups; one comprising the conditions of asthenic paralysis, represented by paraplegia; the other, those of paralysis by propagation, the latter being effected through nervous continuity or anastomoses of branches. Thus are connected the eye, ear, tongue, fauces, larynx, inspiratory muscles, and the heart, through the pharyngeal plexus.

Now, if paralysis of the muscles of the throat may have a peripheral origin, several of the paralyses mentioned, as of the eye, inspiratory muscles, heart, etc., may result by propagation from the local diseased parts. Thus might paralysis of the heart occur by irradiation, through the superior laryngeal nerve, which supplies the larynx and contiguous

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parts of the pharynx with common sensation, and is in direct relation with the superior cardiac nerve, and also through the recurrent laryngeal, a motor nerve, which connects with the superior laryngeal, and sends filaments to the heart, mucous membrane of the trachæ, pharynx and œsophagus, and to their muscles.

Numerous anatomical lesions of the nervous system have been observed in the subjects of diphtheritic paralysis, among which are the following named, viz.: Congestion, inflammation, and thickening of the meningeal membranes; extravasations of blood in small clots, and diphtheritic deposits on and between their layers; small clots within the medullary portions from capillary hemorrhage, with softening of the contiguous parts; embolic plugging of the capillaries and arteries by micrococci, and consequent softening of the parts supplied by the latter; extravasations of blood into the gray matter of the cord, conjoined with peripheral softening, and congestion of both roots of the spinal nerves; degenerations of the nerve-cells of the cord, their nuclei and nucleoli; multiplication of fibrils and nuclei around the central canal at the commissure; turgidity of the blood vessels, with or without hemorrhage or diapedesis; hemorrhagic foci and leucocytes within the sheaths of the lymphatics, limited to the gray matter of the anterior horns, and of the nerves implicated; infiltrations of cellular or uncleolar bodies, isolated or joined by protoplasm, within the neurolemma; changes indicative of neuritis, believed to be sometimes ascending, and the anatomical basis of ascending paralysis; atrophy of the anterior roots and of the intramuscular nerves, resembling that following the separation of a nerve from its trophic centre; proliferation of the nuclei of the sheaths; segmentation of the hyaline, and vegetation of the protoplasm, with absence of the axis cylinders; and in some muscular nerves, absence of the medullary matter, and inside the neurolemma, at certain intervals, elliptical granular bodies without nuclei.

THE DIAGNOSIS

Of diphtheria, usually quite easy, is sometimes attended with uncertainty. The mild form of the disease is not always clinically distinguishable from simple sore throat, and cases of a doubtful character, occurring simultaneously with or consecutive to others of unquestioned diphtheria, for safety should be regarded as diphtheritic. Closely examined, the state of the mucous membrane and the quality of its coating if any be present, may lead to a correct conclusion. Generally in simple catarrhal inflammation, the congestion is slighter, more diffused, and the redness is lighter colored; the coating, when present, is wholly superficial, slightly

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adherent from its vicidity alone, evidently consisting of the altered secretions of the parts, and when removed, the vivid redness of diphtheria is not seen.

On the other hand, in mild diphtheria, the congestion and redness are more intense and limited, being confined frequently to one side of the throat, to one tonsil, to the arch of the palate, or to some part of the pharynx. Doubt will be solved by the appearanee of false membrane, either in patches or otherwise; by the appearance of albuminuria; by the supervention of paralysis; or by the presence of a degree of weakness or prostration bearing no appreciable relation to the severity of the case.

In the severer forms of diphtheria there can rarely be any serious difficulty in the diagnosis. The characteristics of each, as already detailed, are so distinctive as to very seldom admit of any doubt. Only in insidious primary laryngeal diphtheria, or typical croup, is there great liability to error. This form of the disease being frequently preceded in the first stage by insignificant catarrhal symptoms, may progress for one, two or three days unsuspected, until the ominous ringing cough suddenly strikes the ear like a death knell, and rouses to a sense of impending danger. Even when attention is called to the larynx, it is no easy matter — it may be impossible — to make a laryngoscopic examination; none but experts can do it, and they may fail. The fully developed disease cannot well be confounded with any other.

During the epidemic prevalence of the disease its victims are sometimes stricken down by maligniant diphtheria and perish so suddenly — killed apparently by the intensity of the poison — as to leave no local trace of its occurrence. Even in this form of the disease, however, patients ordinarily survive long enough for some of the local characteristics of the disease to develop. In the absence of these, the diagnosis will rest on inference drawn from the character of the prevailing epidemic.

Certain similitudes between diphtheria and scarlatina, tonsilitis, simple laryngitis, and possibly apathæ and herpes, may lead the unwary into errors of diagnosis. Some epidemics of diphtheria are attended by marked constitutional disturbances, an eruption resembling the scarlatinal rash, and by extensive redness of the mouth and fauces; also like that of scarlet fever. These combined, might at the outset easily mislead the more cautious, but the general symptoms are usually less marked in diphtheria than in scarlatina; the appetite is less impaired, the fever not so high, but the weakness or prostration is more decided. In scarlatina a bright redness is diffused over the whole mucous membrane of the mouth and throat, the papillæ of the tongue are distinct, red and prominent, and if any exudation or coating be present in the

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throat, it is merely the normal or altered secretion, loosely adherent and easily removed. Albuminuria is common to both diseases; but hæmaturia, rare in diphtheria, occurs quite frequently in scarlatina. Both diseases may co-exist; a combination at once dangerous and difficult of diagnosis.

Diphtheria may be complicated with tonsilitis; which may go on to suppuration, and always causes difficult or painful deglutition. The points of resemblance between simple tonsilitis and severe diphtheria are these: both tend to unilateral development, and both may be ushered in with considerable fever, local congestion, swelling, pain and inflammation, and dysphagia. The points of difference become more obvious as the cases progress. In tonsilitis, either suppuration occurs within a week, or the pain, swelling, etc., gradually subside without further trouble. In diphtheria, the characteristic phenomena are soon developed and all doubt vanishes.

There can be no doubt, although improbable on its face, that apathæ (thrush) and herpes of the throat, have been mistaken for diphtheria,—a mistake, however, on the right or safe side. The former may be attended with some fever, anginal pain, and by the eruption, at the ordinary site of diphtheria, of a patch or patches of isolated or confluent vesicles, usually having no tendency to spread. The occurrence of vesicles on the lips at the same time would at once suggest herpes as the general disease, and of little moment; while extension of any disease to the nose, and especially to the larynx, has the more serious import of diphtheria.

The diagnosis of *simple* or *catarrhal laryngitis* from *laryngeal diphtheria* or *true membranous croup*, is often difficult and sometimes impossible, at the commencement of the disease. The former very generally, the latter very rarely, ends in recovery. Both affections may first show themselves by night, the former almost invariably, the latter less frequently. If it were practicable to examine the larynx in each disease, the appearance of the mucous membrane, and especially the presence or absence of the false membrane would be sufficiently distinctive. In lieu of such examination, the sputa should be carefully scrutinized, and if the characteristic pseudo-membrane be found after careful washing and watching, the diagnosis is settled. Dyspnœa is frequently a prominent symptom in both diseases, but there is this difference between them: the milder affection is marked by complete intermissions, while in true croup, no complete intermissions occur, more or less dyspnœa being constantly present after the disease is fully developed. As the disease progresses, all doubt as to its nature will be dispelled by the tendency to recover, on the one hand, or to prove fatal on the other.

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PROGNOSIS.

Little more need be said concerning the prognosis of diphtheria, than to briefly recapitulate some of the leading points already incidentally stated in the preceding sketch of the disease. Indeed, it is generally impossible, at the outset of even the mildest case, to predict the issue with certitude. Cases presenting insignificant constitutional disturbances and local lesions, may suddenly assume a very serious form, and go steadily on to a fatal termination; while very unpromising cases of the severer forms sometimes recover quite unexpectedly, despite gloomy forebodings.

A wide range in the rate of mortality has been observed in different epidemics of diphtheria, as from 5 to 57.5 per cent. Making due allowance for several apparently high-colored reports by enthusiastic advocates of their own specious plans of treatment, and taking the average of numerous epidemics, the rate of mortality falls between 30 and 40 per cent.

During the epidemic prevalence of the disease, cases occasionally die from the direct sedation of the infecting poison, as if from a powerful narcotic; but, usually, patients perish more gradually from progressive blood-poisoning. In malignant diphtheria, not immediately fatal, and in the gangrenous form of the disease, death almost uniformly occurs from septicæmia. The exceptions are very rare. In the typical and croupous forms, the blood-poisoning, if present, supervenes more gradually and destroys about a third of those affected with intense local inflammation and abundant false membrane. The danger of a fatal termination in these cases, is directly proportional to the extent and intensity of the local mischief. When the inflammation and false membrane spread rapidly, they are extremely liable to involve the nasal cavities, increasing to the danger of septicæmia, and to invade the larynx as true croup, the most destructive form of the disease, and from which about 90 per cent. of its victims perish in the agonies of gradual asphyxia, induced by mechanical impediment to respiration.

Every form of diphtheria is liable to be attended and followed by albuminuria, which is chiefly important in prognosis, as the possible, if not probable sign of diphtheritic nephritis, an affection at once intractable and dangerous.

Besides the special tendencies and liabilities of the several forms of the disease, the prognosis will be materially influenced by the age, constitution and previous state of health of the patient; by the local sanitary conditions, and by the particular character or type of the prevailing epidemic. If this be virulent, most cases will partake of the

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same character, and the prognosis will be accordingly grave; or, if the type be mild, the cases will generally run a favorable course.

Certain general symptoms have a special prognostic value. Thus, sudden extreme prostration; frequent vomiting or persistent nausea; troublesome or profuse hemorrhages; irregular and feeble cardiac action, with a very frequent or remarkably slow, weak pulse; syncope or tendency to it; a gradual and permanent rise of temperature to 105 or 106 degrees, after a previous fall to, or below the normal; these, all and singly, indicate profound blood-poisoning, and usually are the harbingers of death.

TREATMENT.

Only an outline of the therapeutics of diphtheria can now be given, and before presenting this, let it be premised that there are no known specifics for the disease, and that the principles of therapeutics and the dictates of experience are the main guides to a rational practice. From these, certain leading indications may be deduced, namely: 1st, to moderate the severity of the symptoms, and to counteract the toxic effects of the specific infecting poison on the system; 2d, to destroy or neutralize the septic qualities of the local diseased products, and prevent septicæmia by auto-inoculation; 3d, to promote a speedy spontaneous exuviation of the false membrane and fibrinous infiltrations; 4th, to support the strength and husband the resources of the patient until convalescence is established; and, 5th, to mitigate or remove the secondary complications and the sequelæ of the disease.

To secure the first indication, the patient should be lodged in a spacious, well-ventilated room, kept at a uniform temperature, between sixty and seventy degrees, and through which, if laryngeal complication be present or feared, steam should be constantly diffused. No persons, save the necessary attendants, should be admitted to the sick-room. If fever be high, the patient *may* be packed in wet sheets, and should at least be frequently bathed or sponged with tepid water. Iced water and bits of ice may be freely taken, and while the local inflammation is progressing, bags of ice to the throat will be grateful and beneficial.

Medication will ordinarily be well commenced with a mild purge, as the compound senna powder, or the effervescing citrate of magnesia, which may be repeated as needed. In certain cases this may be followed immediately by brandy or whisky in copious draughts, without fear of intoxication or other untoward effect. Indeed, there is abundant testimony as to the decided utility of alcohol in all stages and complications of the severer forms of the disease, the size and frequency of the dose being regulated by its effects. The conditions demanding its free use,

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are marked weakness, prostration, syncope, delirium, and especially a very irregular pulse, that may be alternately quite feeble and slow or very frequent and weak, all indicative of cardiac failure and intense blood-poisoning. In these conditions, all movements should be avoided, and the head be placed low. High fever and temperature do not contra-indicate the use of alcohol; and an ounce to a gill of whisky, or brandy in proportion, according to the age or the severity of the case, may be given every hour or two, or often enough to maintain a steady supporting effect, until the special dangers are safely passed.

Some practitioners use alcohol in every case and form of the disease, both internally and topically, to the exclusion of all other medication. The writer does not share such extreme confidence in its curative powers, and would hardly neglect in any case to exhibit iron and quinine, or other salt of cinchona bark. Thus, for example, for a child five years, the following would be a sample prescription: ℞ Sulph. quinine, gr. viij; tinct. perchloride of iron, ʒj; syrup, wintergreen water, each, ℥j; m. s. dose, teaspoonful every two to four hours, according to case; continued until the false membrane exfoliates and the fever subsides, and then gradually discontinued. If high fever, headache, vomiting and signs of septicæmia mark the attack, much larger doses may be needed repeatedly for one to two days, or until cinchonism occurs, or improvement takes place, or the further use of the medicine seems harmful. To push quinine beyond cinchonism is always useless, and may be injurious.

Chlorate of potassium, in two to five grain doses, may be given with the preceding prescription, or separately, as a common drink, a drachm to a pint of water, or used much stronger as a gargle. It should never be exhibited in large quantities, or with lemon juice or citric acid. The writer has seen fatal enteritis follow the continued ingestion of the drug, and several cases of poisoning from it have been reported.

Mercury may be mentioned to be condemned; while bromide of potassium, sulphuret of potassium, and the balsams have been variously extolled, but have not secured general favor with practitioners. Salicylic acid, so valuable in rheumatism, has been highly commended for diphtheria; the writer has no experience with its use in the latter, but from its known antipyretic powers it may doubtless be sometimes beneficial. Carbolic acid and sulpho-carbolate of soda, internally, have been tried by the writer, with negative results. Benzoate of sodium has likewise quite recently been vauntingly proposed as a specific for the disease. Beware of all claims for specific medicines!

To fulfill the second indication a great variety of remedies have been

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tried. Caustics met early favor, but latterly have fallen into general discredit; although lunar caustic is still employed by a few. From his own experience, the writer must disparage their use, particularly the nitrate of silver; for they aggravate without benefiting the disease. Creosote water or carbolic acid, twenty-five grains to the ounce of glycerine and water, by their deodorizing, disinfecting and local anæsthetic qualities, have been of the highest service in the practice of the writer. The tincture of iron, given in oft-repeated doses for its constitutional effects, doubtless exerts likewise a beneficial topical effect, as it frequently comes in contact with the diseased surfaces.

Chloral hydrate applied every hour or so, of the strength of ℈j or ʒss to ʒj of syrup, has also proven, in the hands of several, of decided utility. From its antiseptic, detergent and anæsthetic powers, it recommends itself to very favorable consideration, although the writer has not tried it. Chlorine, in various forms, is too well and favorably known to require comment. Sulphur has disappointed many, while others use it insufflated, mixed with honey and otherwise, with much seeming benefit. Perhaps its beneficial effect may be ascribed to the formation of sulphurous acid at the place of application. Permanganate potash, five grains to the ounce of water, is an efficient antiseptic, especially applicable to nasal complications. All of the liquid antiseptics may sometimes be most advantageously applied in the form of spray.

To promote the third indication (exfoliation of false membrane, etc.), the continuous application of heat to the throat ranks foremost. To remove the false membrane by force, unless by its presence suffocation be imminent, would be worse than useless. Heat may be applied by oft-repeated hot water gargles and drinks, by inhalations of steam, and especially by hot spray and steam from slaking lime directed against the false membrane; externally, by hot fomentations, flax-seed poultices or strips of salt pork or bacon tied around the throat. Hot poultices are best; but the pork or bacon, being least troublesome to assistants, may be most useful. Besides the lime water, caustic potash (one part liquor potass. to four of water) and lactic acid (℈j to ʒj) have been found efficient solvents of the false membrane, the last, in particular, applied by lint on a stick, being considered the best. Thus loosened and softened, the detritus of false membrane may be cleared away, and the raw surfaces cleansed by astringent and detergent remedies, which promote the restoration of the mucous membrane to a normal condition. The tincture of iron, alum, borax and tannin, have each been found useful; while the domestic vinegar, salt and pepper, combined, may sometimes be just as efficient.

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Quite recently, ethereal solutions of the gum tolu, benzoin, mastich and common resin, the first being regarded as the best, have been warmly commended as local varnishes, applied after carefully drying the part to be covered, for their sheathing, soothing and incidental antiseptic effects.

The fourth indication (to support the strength, etc.), should be carried out by using alcohol and the general tonics as mentioned, and by systematic feeding of food at once digestible and nutritious, especially if the appetite fail, or nausea be present; when the patient should be regularly fed at short intervals, day and night, with new milk, milk punch, egg-nogg, etc. If milk be not readily digested, perhaps its digestibility may be improved by lime-water. Milk should not be given in too close connection with some of the medicines recommended. Beef tea or essence enjoys general confidence; but in equal bulk it is less nutritious than milk or egg. Rarely, all food by the mouth is rejected; when suitable nutritious enemata may, still more rarely, save or prolong life.

The fifth indication, covering nasal and laryngeal diphtheria, should be followed out by the general medication already outlined; by the steam and spray of lime-water, for the croup, and by castile soap and water, carbolized; permanganate of potassium, and carbolic acid and glycerine douches and injections to loosen the plugs in the nose, and to disinfect its cavities. As soon as false membrane forms in the larynx, an attempt to remove it may be made from time to time by an emetic (alum and syrup the best), repeated, if necessary, every fifteen or twenty minutes until emesis occurs. Tartar emetic should *not* be given. Skillful laryngoscopists have removed portions of false membrane from the larynx by mechanical means; and the results of tracheotomy, in relieving the urgent dyspnœa, and saving life, is encouraging, when it is remembered that about a third of those who would otherwise die, may thus be saved with proper precautions in the after-treatment.

The chief sequelæ of diphtheria are the paralyses before enumerated; the most of which tend to spontaneous recovery. A cure may be sometimes expedited by the special nerve tonics, electricity, gentle frictions and sea-bathing, mountain air, and by all the hygienic means tending to a renewal of life.

THE PROPHYLAXIS

Of diphtheria is of public as well as private concern. The same reasons for preventing the spread of small-pox, etc., by isolation and disinfection, apply here with still greater force. Each case should be separated and kept apart from the healthy; and the excreta, diseased products, bedding

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and clothing, and all utensils or instruments used about or touched by the patient should be at once disinfected. All superfluous articles of every kind should be excluded from the room at first, and all suspected articles not readily disinfected, cloths used about the patient, etc., should be burned. Everything remaining in the room should be disinfected by soaking two hours in the following or some other disinfecting mixture: carbolic acid, one ounce; white vitriol, seven to eight ounces; water, three gallons, mix. Thus disinfected and afterwards washed, all fear of a spread of the disease by the clothing, etc., may be dismissed.

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ARTICLE X.

NEW REMEDIES.

REPORTED BY HENRY P. WENZEL, M. D., OF LOMIRA, CHAIRMAN OF THE COMMITTEE.

„Prüfet Alles und das Beste behaltet."

Inflation in therapeutics is apt to be followed by a crash, and the repudiation of most new remedies "first introduced by us," or "first originated with us," will be the final outcome. The introduction of new remedies by manufacturers, and their recommendation by physicians, run riot; each attempts to outwit the other in getting up high-sounding names for plants whose habitat remains a mystery and their therapeutic value a sealed book. It is to be regretted that this idea, born out of time, has fastened its oily fangs on the medical profession. Some of the preparations lately introduced will prove useful agents in therapeusis; many will be assigned to the shelf. Scarcely has one new drug made its appearance, when dozens of other valuable (?) remedies, from every quarter, of every conceivable name, are heralded as an arcana for all diseases, bewildering the conscientious practitioner, to the detriment of the sick. We protest against this evanescent infatuation. No practitioner should be a cat's-paw for the manufacturer's chestnuts.

Many old remedies have acquired new therapeutical uses, and some new remedies have already established their value in the treatment of disease. Of the latter, chrysophanic acid, in skin diseases; thymol, in wounds; mistletoe, in parturition; iodoform, in various diseases; the oleates (especially of mercury), in eye diseases;* cosmoline, for internal and external use. Of the former, sodium bicarbonate, in burns; iodine, in malarial and typhoid fevers; bromine, in cancer; ergot, in diabetes and spinal lesions,—are typical examples of improvement in our armamentarium medicinæ.

It is impossible to notice all the new elixirs, syrups, pills, and a host of other preparations, whether they are "copyrighted" or not. Granules of various colors, and parvules of different composition, have taken their

* Dr. M. Landesberg, Reprint from Klin. Mon-Bl. f. Aug. Hlkde, Sept., 1873.

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places with time-honored pills. Granulating effervescent salts of many combinations are useful and palatable articles, and deserve a larger and wider range of usefulness. Case: Mrs. E., primiparæ, aged twenty-six, was prostrated with the severest symptoms of pregnancy. Every known remedy was tried in vain. Citrate of bismuth, strych. and pepsine in teaspoonful doses *ter in die*, relieved her in three days, and she went to term without further trouble.

Some pharmacists are habitually getting up proprietary preparations, and the emulation bestowed on this class of drugs deserves of a better cause. It is a new way of flooding the country, hereafter, with another variety of nostrums detrimental to the physician and injurious to the sick. The medical profession should countenance no remedy, of whatever form or consistency, whose habitat, mode of preparation and composition is clothed in mystery.

Fanciful names should be discarded in all preparations, and only the officinal or most common name should be applied. Any substance that is not worth labeling well or being properly designated, should be destroyed. "Label or burn"!*

Many of the fluid extracts are not of officinal strength, and some even are inferior to the officinal tinctures of the Pharmacopœia. Out of sixteen specimens examined (fl. ex. canab. indic.) only two deserve the name of fluid extract; the remainder were inferior articles; six did not contain sufficient extract for the officinal tincture;† so with many others. All fluid extracts should be prepared from good, pure, crude drugs by the most improved methods of repercolation,‡ and should be of full strength. This is the stumbling-block of so many failures; and heartless manufacturers are the evil fountain of the cause of failure.

"The first step in remedying this evil must be to hold pharmacy to accountability and reliability, by making it a part of the medical profession. It must be a specialty, like every other medical specialty, having its foundation in a thorough medical education. It must, like Ophthalmology and Gynæcology, be made a specialty, only because it may not be practicable for each practitioner to attend to every department of medicine, and in order that by giving more time for study, greater accuracy may thereby be obtained."‖

We cannot present laboratory details nor the results derived from experiments made on animals. In a majority of instances they may be fallacious, frequently worse than useless. We should not rush to the bedside with the idea that these so tested (on animals) remedies are a

* Mich. State Board Health Reports, Vol. V., p. 23, et seq.
† Chicago Pharmacist, April, 1878.
‡ Repercolation, by E. R. Squibb, M. D., Reprint, 1878.
‖ Trans. Int. Med. Cong. 1876, p. 1075, et seq.

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panacea for all ills, but that the best may fail in a crucial test. We need clinical facts. Drugs taken by man in health frequently have a different action than when given in disease; if this is false, Hahnemann's views are correct, and *similia similibus* is a fact.

Before closing our prefatory remarks, it is necessary to state that few drugs now escape the hands of the adulterator. Marble-dust and soot are sold for black antimony,* and a New York firm manufactures three grades of cremor tartari, the best of which, according to a Boston chemist, contains about fifty per cent. of terra alba,† worth half a cent per pound. The only way to correct this evil, and to protect ourselves as well as those entrusted to our care, is to buy only of reliable dealers, and to test every remedy for its purity. Much of this wholesale swindling in the drug trade could be abolished by physicians purchasing and dispensing their own remedies, instead of allowing shysters in the drug trade to prostitute prescriptions by adulterated or useless articles, or by substitution, as so many are in the habit of doing.

I. BROMINE.

Bromine has lately been extensively used as a cauterant in cancer, with good success. The following reasons are given: 1. It produces a cure (if not permanent) of cancerous tumors with less loss of substance than the knife or actual cautery. 2. This treatment can be better applied to the uterus than the knife or burning iron. 3. The scarification produces but little hemorrhage. 4. The peritoneum can be touched without fear of grave inflammation, in which Simon coincides.‡

II. POTASSIUM BROMIDE,

Combined with glycerine, has been used in many diseases, for local spasms, pruritus, etc., by Ferrand and Guineau de Mussey with success. Epithelioma of the face was cured in twenty days by the daily application of the medicine in powder. Good results were also obtained in chronic ulcers of the lower extremities; in eczema chronicum, pityrasis and acne; in stomatitis and phagedenic ulcers; in epistaxis, hæmoptysis and menorrhagia it was found to be successful after ergot, perchloride of iron and rhatany had failed.‖

III. ANTIDOTE TO OPIUM POISONING.

Scalding hot water has been successfully used in cases of opium poisoning, by Dr. Wm. Selden. He plunges the feet into a tub or pail

* Chicago Pharmacist, February, 1879.
† Medical and Surgical Reporter, Vol. XL., p. 369.
‡ Giornale della Academia de Torino.
‖ Va. Med. Monthly, Vol. V, p. 596, from Le Monitor Therapeutique.

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full of scalding water, and keeps them there until reaction takes place, which soon occurs. By this means he has saved patients from apparent death where all other treatment proved inadequate. He has also treated whisky stupor or alcoholism with benefit, by this process.*

This remedy was spoken of, and stress laid on its use, by Henry Howard, M. D., in 1845.† He says: Pouring water occasionally into his ears, shaking, and applying hot water to his legs, to excite pain. . . . Place the feet in very warm water, and pass a sponge dipped in the same, as hot as the hand can bear, over the shoulders, back and chest, . . . dashing cold water in the face," etc.

No doubt this mode of treatment would be beneficial in stupor and comatose or semi-comatose conditions, in excessive hyperæmia or in congestion of the brain. This powerful revulsive is cheap, and to be had everywhere.

IV. IODINE.

Tr. Iodini was used in ague more than five years ago,‡ and Napheys called attention to the drug in 1871.‖ Nowadnitschauski has used iodine extensively with eminent success.§ When the fever is broken the dose should be continued at longer intervals. Iodine is equal to quinine, and there is no danger of cumulative effect. It is promptly excreted by the kidneys and salivary glands. My friend, Prof. Ford, made extensive use of iodine in malarial diseases. It breaks up chills which quinine failed to avert. It does not derange the stomach, but improves the appetite from the first.¶ Dr. Grinnel of Wichita Agency, and Dr. Irving W. Smith use tr. iodine extensively among the whites and Indians with perfect success, combined with opiates or astringents, when the latter are indicated. The latter sums up: "I have been astonished and delighted with the results. One hundred and forty-seven cases — one hundred and thirty-five of intermittent, four of malarial diarrhœa, eight of malarial neuralgia—some were children — have thus far been treated with iodine, and the results have been fully equal to those treated with the sulphate of quinine." **

The Reporter has used tr. iodine in typhoid fever, with happy results, in the third stage of the disease, when the salts of Bark failed to influence the disease,— temperature, 106½° F., subsultus, etc.,— and brought down the temperature in two days to 99° F., and kept it there until con-

* Va. Med. Monthly, Vol. V, p. 578, et seq.
† Outlines of Medical Jurisprudence, by Henry Howard, M. D., 1845.
‡ Med. and Surgical Reporter, Jan., 1874.
‖ Napheys' Therapeutics.
§ St. Petersburger Medizinische Wochenschrift.
¶ Private communication.
** Louisville Medical News, vol. VI, p. 212.

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valescence was established. There were no sequelæ. We obtained good results, also, in chronic gastric lesions, and in suppressed menstruation due to deficient blood, etc.

Goss* recommends iodine in carbuncles, boils and bone felons; if used early it will cause the boil or carbuncle to shrink away. ℞. tr. iodini ʒiij; tr. arnicæ, sp. tr. aconiti, tr. cantharides, aa ʒij M.; locally applied in incipient felon removes the pain speedily; if matter has formed it will be drawn to the surface, and cutting down on the bone is avoided.

We usually direct equal parts of tr. iodini and syrup simplex to be thoroughly mixed, and from fifteen to thirty drops be administered to adults, in milk, thrice daily; children less.

V. SODIUM SULPHO-CARBOLATE.

This salt has been used with varying success in scarlatina, measles, small pox; and in diphtheria its use has been followed with gratifying results. Risgen gave it to twenty children at the inception of the disease — scarlatina — and thirteen escaped altogether. Of eighteen cases treated one only died, in spasms, on the second day. Loomis, of Cascade, Wis., says: "I have used sulpho-carbolate of soda in the scarlet fever epidemic in 1876–7, and treated one hundred and seventy-five cases, in all of which I used the salt. I lost about ten per cent.; this percentage could have been reduced had all cases been seen sufficiently early. I have great faith in the drug as a remedy, and believe that it will cut short or modify the disease. Sulpho-carbolate of soda is a wonderful remedy. Usually give ten grains every three hours to adults; children proportionately less."†

Woodbury says it modifies and eliminates the specific poison in rubeola, variola, scarlatina markedly, thus averting the disease from vital organs. It is an anti-zymotic, and will possibly be found to influence the yellow fever poison before black vomit can take place, or ward off the dangerous second stage altogether.‡

We have used sodium sulpho-carbolate in an epidemic of diphtheria with very gratifying results. A large number of cases were treated. There were only three deaths; one was moribund when seen; the second was wilfully neglected to try a floating newspaper prescription.‖ Quinine may be added when indicated.

There are those who persist that to kill the poison germs (probably bacteriæ or vibrios) in the blood, would require enough of the salt to kill the patient. We do not claim that the remedy will cure every case, nor

*Louisville Medical News, vol. V., p. 239.
†Private communication.
‡Virginia Medical Monthly, vol. V., p. 462.
‖Virginia Medical Monthly, June number, 1878.

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that it is a specific in the true sense of the word. But on one side we have carefully observed clinical facts, on the other side theoretical arguments and hypotheses which have been sanctioned by few pathologists and scarcely any clinical teachers. This subject cannot be definitely settled until we have positive, incontrovertible proofs that the diphtheritic poison germ is in or carried by these microscopic animalculæ; or that they only appear as scavengers in the blood, or at the seat of diphtheritic deposits, after the system is infected by poison germs from other sources.

VI. PILOCARPINE.

This alkaloid was discovered by Hardy in 1875, in *pilocarpus pinnalifolius*. It is a sure remedy where the leaves or fluid extract fail. It is antagonistic to atropia. It acts on the peripheral ends of the vagi, exciting the inhibitory nerves of the heart.* It is a powerful sialagogue and diaphoretic. The muriate of pilocarpine has induced abortion when exhibited during pregnancy for psoriasis, syphilis, etc., and the drug may prove useful in inducing premature labor.†

Œdema of nephritic troubles and swelling, following bronchial catarrh, disappeared after injecting a solution of the muriate hypodermically, and Masseneau's two cases of dropsy were relieved, but aborted after its use. Pilocarpine has been beneficial in Bright's disease,‡ and Strognowski‖ quieted an eclamptic patient by a two-per-cent. solution, after morphia failed. Barker§ claims that its therapeutic value in puerperal albuminuria or convulsions is doubtful.

Schauta¶ used pilocarpine hypodermically to induce premature labor in cases of contracted pelvis. He injected a Pravaz syringe full of a two-per-cent. solution of the muriate into the left thigh, at 3:23 P. M. After four minutes, there was dilatation of the pupils (locally applied, or internally administered, pilocarpine *contracts* the pupil, but hypodermically used, *dilates* the pupil; a strange behavior), nausea, sweating of the face, flowing of saliva, sweetish taste in the mouth, trembling of the lower limbs; the temperature remained at 36.8° C., the pulse rose from 68 to nearly 100, and the respiration advanced from 24 to 40. About three hours later, pains were felt, and the cervical canal was dilated. Another injection was given at 10:07 P. M., and at 8:30 A. M. next day a living child was born. The membranes were spontaneously expelled twenty minutes later. Six days afterwards, mother and child were doing well.

* Herr A. Frænkel, Charite Annalen Band III, 1878.
† Monthly Abstract.
‡ Va. Med. Monthly, Vol. VI, p. 68.
‖ Centralbl. f. Gynækologie, 1878, No. 20.
§ Med. Record, March 1, 1879.
¶ Am. Jour. Med. Science, 1878, p. 579.

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Zielewicz has reduced the temperature 2, 2½ and 3 degrees by the use of pilocarpine. A small quantity of morphia added remedies the untoward symptoms of pilocarpine.* Alexandroff† used the solution in cases of rheumato-iridio-choroiditis with cloudiness of the media of the eye; a few injections of two centigrammes of a solution of the muriate of pilocarpine, not only allayed the pain, but cleared up the media as well, avoiding iredectomy. And he thinks it will prove useful in other serous or plastic exudations from local or general disease.

VII. UNGUENTUM PETROLEI.

This substance is obtained from crude petroleum by fractional distillation. It is a compound of olefines and paraffines, and is an oleaginous hydrocarbon of the formula $C^{16}H^{34}$ and $C^{16}H^{32}$, and a small percentage of those lighter than $C^{7}H^{16}$ and $C^{7}H^{14}$. It is unaffected at ordinary temperatures by SO^{4}; sp. gr. 1791. If a large per cent. of the olefines are present, sulphuric acid will discolor them, and gives the product a dark appearance. This is not a sign of impurity, but the olefines are wholesome agents for therapeutic applications. (Cresson, Cannstatt, Redwood.)

Cosmoline, or *unguent. petrolei*, is of a clear, yellowish color, greasy and adhesive; has no decided odor or taste; melts at 38° C., and boils at 329° C.; the sp. gr. at 60° F. being 0.875, being heavier than alcohol and lighter than water. It is free from and insoluble in water, slightly soluble in rectified spirits, very soluble in ether, fixed oils and fats. It may be kept for any length of time without rancidity, and climatic changes have no effect upon it; cannot be oxidized; hence its utility in officinal unguenta and cerata.‡ It is one of the blandest substances known, and may be used when other preparations are inadmissable.

The uses of *unguent. petrol.* are manifold. A thin coating applied over surgical instruments keeps them smooth and free from rust. For anointing purposes it is superior to oil or lard. The instruments and hands should always be anointed with cosmoline before introducing them into the vagina, uterus, or other cavities of the body. Cosmoline is not influenced by the secretions.

Has been recommended internally in inflammatory conditions of the stomach and bowels, found useful in cystitis, in uterine lesions and vaginal complications. *Unguent. petrol.* is antiseptic, and a valuable dressing to wounds of all descriptions, and in burns. We have used the remedy, simple and in various combinations, for several years, in a large

*Hospital Gazette.
†Pamphlet, Marseilles, 1878.
‡Virginia Medical Monthly, vol. IV, p. 186 et seq.

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variety of cases, with eminent success. In chronic ulcers on indurated bases it is a very valuable remedy. Has been successfully used in acute and chronic eczema* (Rohe), ichthyosis,† in various diseases of the scalp, and in chapped hands. At the Hopital St. Louis it is largely used in ophthalmic surgery,‡ being well borne by the conjunctiva. May be used as a hair dressing, being made into a pomadum with other remedies, and flavored *ad libitum.*

VIII. CHRYSOPHANIC ACID.

This acid was first obtained by Schræder (1819) from common lichen; was obtained pure by Rochleder and Held (1843), and soon after discovered in and prepared from Moscow and China rheubard by Schlossberger and Depping (1844). Balmanno Squire introduced it into practice a few years ago. Its formula is C^{20}, O^{6}, H^{8},‖ and forms deep-red solutions with the alkalies, and a red substance with warmed sulphuric and nitric acids, which is soluble in ammonia, giving a violet color.

Goa powder, Bahia powder or Araroba powder was first introduced by Frayser, of Calcutta, in 1874.§ It contains eighty-five per cent. chrysophanic acid.¶ Goa powder was first used successfully by Dr. Theobald Ringer in an inveterate case of psoriasis, which had resisted all treatment for a year and a half.**

Most of the chrysophanic acid used at present is prepared from Goa powder. Some of the Rumex family also contain appreciable quantities of the acid. The acid is of a yellowish color, odorless, tasteless, and may be separated into chrysarobin and chrysophanin;†† the latter causes vomiting, the former purgation. We placed several grains of the acid into a test tube, sealed it, and applied heat by a spirit lamp; there were slight detonations, and then the acid liquefied and assumed a mahogany color; the lower part of the tube gradully cleared up, while a greenish-brown smoke filled the upper part of the tube. When the tube had cooled off, it was fractured. Very light, beautiful, feathery, light-brownish crystals, of velvety softness, were deposited around the interior of the tube.

Chrysopanic acid has been recommended and used successfully in lupus, herpes tonsurans, pitryasis versicolor, psoriasis, eczema,‡‡ and is especially useful in chronic dermal lesions. Prof. Neumann, of Vienna, regards it as the most valuable of all our remedies in our cutaneous

*N. Y. Medical Journal, June, 1877.
†Archives of Dermatology, July, 1877.
‡L' Union Medicale.
‖King's Dispensatory, p. 704.
§Wiener Medizinische Presse, No. 14-16, 1878.
¶Attfield.
**Indian Medical Gazette.
††Schroff, J. Ashburton Thompson.
‡‡Gardner in Brit. Med. Jour.

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materia medica.* The diseased parts should be cleared of the scales and *debris*, and the ointment applied with a brush or rag. The mahogany-stained skin peels off in large flakes after a few days, and the healthy skin appears beneath.

The objections to its use are, that it stains linen purple,† gives the skin a mahogany color, and colors the hair. Sometimes it produces pain and an erythematous rash at the place of application. Patients must avoid getting it into their eyes. Squire says a small quantity of benzol added to the ointment, will counteract the noxious properties.‡

The ointment may be prepared of different strength, by dissolving the acid in boiling fat, etc., and well rubbed in a mortar until cold,‖ to break up the hard crystals and prevent grittiness.§ *Unguent. petrol.* is a superior solvent.

Dr. Charteris applied the ointment to half the body, and the whole body was cured.¶ My friend, the late Dr. Lueck, successfully treated a case of psoriasis palmarum (with one-half drachm acid to the ounce of vehicle) which had resisted all other treatment for years. Mr. A. Sangster used the ointment beneficially (5 gr. to the ounce) where arsenic was not tolerated.** Da Costa treated chronic psoriasis with eminent success,†† and Neumann prefers it to all other remedies in this disease. A case of psoriasis of twenty-seven years' standing was treated by phosphorous pearls internally, and chrysophanic acid ointment locally (ʒii to the ounce). The patient was cured in one month.‡‡ The acid has almost become a specific in chronic psoriasis, and cases are everywhere treated successfully.

IX. IODOFORM.

Iodoform, also called teriodide of formyl, was discovered by Serullas (1822), and introduced into practice by Dr. M. Glover of London, and M. Bouchardat of Paris (1837). It was almost entirely ignored by the scientific world, notwithstanding the encomiums of Pick, Demarquay, Vœlker, Nunn, Kennedy, Hamilton and others. It was scarcely mentioned in the text-books, and the clinics and hospitals did not use it at all.

Lessing says: "This preparation belongs to a more recent time, and needs closer examination."‖‖ Nothnagel writes: "The use of iodoform has been recommended in neuralgia, painful tumors, etc., with much

*Wiener Medizinische Presse.
†Med. and Surg. Reporter, Vol. XXXVIII., p. 32.
‡London Lancet.
‖A. W. Postans, Mr. Gerard.
§Va. Med. Monthly, Vol. VI., p. 140.
¶Louisville Med. News, Vol. VI., p. 81.
**London Lancet.
††Medical and Surgical Reporter, Vol. XXXVIII., p. 146.
‡‡Va. Med. Monthly, Vol. V., p. 595.
‖‖Materia Medica, Berlin, 1863.

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benefit."* Binz† carefully described the drug, presented it in its true light, and attracted professional attention. It is but briefly touched by American authors, and only one essay on the subject came to my notice in the medical journals.‡

Since J. Moleschott‖ of Turin has presented an incontrovertible array of facts, gathered by careful physiological and clinical experiments, in its favor, the drug is now quite freely used. He says, iodoform unites antiphlogistic, dissolving, resorbent, resolvent, and anæsthetic properties, and is of therapeutic use from neuritis to neuralgia; from leuchæmia to meningitis tuberculosa; from lymphatic glandular tumors to effusions in serous sacks; from attacks of gout to hygroma.

He effected many cures in chronic glandular enlargements, in chronic joint troubles and diseases of bone tissue. In bone diseases with fungus-flesh — some were considered cases for amputation — and the application of collodionized iodoform or iodoform ointment (1–15) not only stopped the pain, but relieved or cured the patient. In enlarged spleen the pain was reduced, the size of the organ diminished, the appetite improved and the proportion of red-blood discs were raised to the normal standard. Iodoform stands first in leuchæmia. In orchitis it produced cures within a week. In pulmonary tuberculosis, with ascitis, the application of the collodionized iodoform caused the fluid to disappear in fifteen days. It has been successfully used in effusions of the pleura, pericardium, peritoneum, and beneath the arachnoid. Paracentesis is advised only after iodoform has failed, which it seldom does. Moleschott had excellent success in acute hydrocephalus in children, and reports three complete cures out of five cases, in this generally fatal disease. In chronic rheumatism it is of much value, but nearly useless in the acute articular form.

Zeissel obtained favorable results from iodoform in venereal sores.§ Has been given with good results in syphilis.

Landesberg, of Philadelphia, has made extensive use of iodoform in ocular diseases, with eminent success in neuro-retinitis-descendens, and says: "I think I am fully justified in attributing this remarkable result of *restitutio ad integrum* in such a hopeless case solely to the rapid and vigorous action of iodoform."¶

We have used iodoform in ocular diseases with satisfactory results. In uterine colic the patient was permanently relieved by the internal use of iodoform after all other remedies failed; in general depression and

*Handbuch der Arzneimittellehre, 1878.
†Grundzuege der Arzneimittellehre, 1874.
‡Medical and Surgical Reporter. Vol. XXXIX., p 374 et seq.
‖Wiener Medizinische Wochenschrift, Nos. 24, 25, 26, 1878.
§He uses it combined with sugar-of-milk locally, and with white sugar internally. Wiener Medizin. Wochenschrift, No. 21, 1878.
¶Medical and Surgical Reporter, vol. XXXIX, p. 375.

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menstrual inactivity with happy results. In a case of cancer of the stomach, with its concomitant symptoms,—coffee-ground vomiting, lancinating pains, insomnia, anorexia, and a well-defined tumor in the anterior wall,—iodoform ameliorated the pain, stopped the vomiting, produced sleep and appetite, changed the color of the face to a more natural hue, and after two months' use the tumor is considerably reduced.

Iodoform is best administered internally in pill form, adding a small quantity of some of the essential oils to disguise the rather unpleasant odor. Ether perfectly disguises the odor for a short time. For local use it may be made into an ointment (1-15) or dissolved in collodion and applied with a brush. The dose internally is from one to three grains thrice daily. In large doses it proves fatal, tetanus generally occurring; but there are no internal lesions. Its internal use is sometimes followed by palpitation, eructations and nausea. Iodine is usually detected in the urine after iodoform has been used.

X. MISTLETOE.

The American species, *phoradendron flavescens*, is a parasite which grows on oak, maple, poplar, walnut, cherry, and elm trees. That which grows on the oak is generally preferred, but those plants on *ulmus nemoralis* and on *quercus aquatica*, are reported to possess the most energetic medicinal properties.* All parts of the plant contain viscin — birdlime. The bark and leaves have an unpleasant odor and a mawkish, bitterish taste. The berries contain viscin, green wax, gum, bassorin, brown extractive, lignin, salts of potassa, lime, magnesia, and oxide of iron, united to vegetable acids. (Henry.)

Medical properties: narcotic, antispasmodic, tonic. Has been used and found beneficial in epilepsy, insanity, paralysis and other nervous diseases.† W. H. Long, M. D., has used it for many years as an oxytoxic, and prefers it to ergot, which cannot be given in every stage of labor, in uterine hemorrhage and metorrhagia.‡ There are less after-pains than after the use of ergot. He uses the infusion of the bark (bark ʒij, water oss., dose, half teacupful) or the tincture.‖

We have used a fluid extract prepared by Messrs. Hazard, Caswell & Co., of New York, in parturition, and are satisfied that its *clinic oxytoxic action is a desideratum in labor; the pains become more energetic; between the pains there is a respite to the patient, she gathers more strength for the next pain, and labor is expedited; there is no danger to the child.* Ergot *produces tonic* contractions; there is no intermission of pains; no repose

* King's Dispensatory, p. 861; edition 1871.
† l. c.
‡ Louisville Medical News, vol. V, Nos. 11 and 14.
‖ Louisville Medical News, vol. V, p. 238.

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to the goaded uterus; no rest to the patient; great danger to the life of the child, and sometimes extensive laceration of the perineum, or rupture of the vagina, uterine neck or body, when the contents of the uterus are shot through the passages like a cannon-ball. We use mistletoe altogether in parturition. We have also used it in post-partem hemorrhage, two weeks after delivery, with success. The placenta was delivered entire shortly after the birth of the child. What the cause of, and whence the flow of red blood, was difficult to determine. Here, position, warm water and hot water injections. kneading of the uterus, and large doses of ergot, failed.

XI. THYMOL.

This stearopton, discovered by Lallemand,* is obtained from the oil of thyme, oil of monardæ, and from the oil of *Ptychosis ajowan.* Its formula is C^{10} H^{14} O^{1}, it crystalizes in colorless, nearly transparent, tabular crystals; is neutral to test paper and polarized light; has a peculiar odor, and a pungent, aromatic taste; its sp. gr. is 1.028; it fuses at 45° C., and boils near 230° C. It forms a crystalline compound with soda—C^{10} H^{13} Na O—and is sometimes called thymic acid.† Thymol is soluble in 1000 parts cold, and in 333 parts of warm water, in 995 parts of alcohol; one grain thymol is soluble in 120 grains glycerine and 600 grains water, which forms a clear solution,‡ slightly acid, has a decided odor of thyme, and an aromatic, pungent taste.

Thymol is one of the homologues of carbolic acid, and may be used as a paraciticide and antiseptic, and to *cauterize the dental nerves.* It is more agreeable than carbolic acid, and may be substituted for the latter in all cases. It is a very efficacious dressing to wounds and ulcers, favoring cicatrization.‖ The only objection to its use is the sweetish taste, which attracts swarms of flies. (Bardeleben.)§

Animals poisoned with thymol sink into profound coma. After death, their blood turns dark and fluid. Fatty degeneration of internal organs has not been observed. Injected into the veins it lowers the temperature and induces stupor.¶

Richard Volkmann, of Halle, introduced thymol as a substitute for carbolic acid, in external dressings. Ranke concludes, from the treatment of forty-one wounds, that thymol leaves nothing to be desired as to its antiseptic effect, and that it answers better than carbolic-acid dressings; the secretion from the wound is less, the period of healing shorter,

*King's Dispensatory, Ed. 1871, p. 831.
†National Dispensatory, p. 979.
‡Med. News and Library, Vol. XXXVI., p. 82.
‖King's Dispensatory, l. c.
§Am. Jour. Med. Science, July, 1878, from London Med. Record.
¶Med. and Surg. Reporter, Vol. XL., p. 17.

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the cost of dressings smaller; and that it has no poisonous properties, and eczema did not follow its use.* Dr. R. Crocker and Mr. W. H. Stone have prescribed thymol solution internally in St. Vitus dance, successfully.† Dr. B. Kussner of Halle used a one-per-cent. solution successfully in the diarrhœa of children; dose 3–5 drops. A solution by inhalation was tried in a case of phthisis. The fever was reduced, and the expectoration lessened. Steiner used a one-per-cent. solution in cases of sore nipples, in the wards of Charite Hospital, with gratifying results.

We have used thymol solution successfully in wounds and ulcers, and prefer it to carbolic acid. In many instances, patients cannot bear the odor of carbolic acid, especially in uterine lesions. Thymol has a pleasant odor, and its use leaves nothing to be desired. Have used it altogether, lately, in uterine fissures, abrasions, ulcers, and with most excellent results, destroying the fetor at once, and hastening the repairing process. In a case of complete procedentia uteri, of many years standing, patient aged 72, with the womb hanging between the thighs, covered with scabs, fissures and ulcers, emitting a terribly fetid odor, thymol olution applied destroyed the fetor effectually. The prolapsed organ was reduced and kept in place by a tampon saturated with the solution. The patient could walk, and was completely relieved by the thirty-fifth day.‡

Thymol camphor is a powerfel antiseptic, and easier made into ointment than thymol; it is more powerful than carbolic acid. Lately, I have used this solution: ℞ thymol, G. camphor, hydrate chloral aaʒii rub in a mortar until liquified, add ʒiv alcohol, and shake in a bottle; now add ʒvi glycerine and ʒxxij water; shake thoroughly. This forms an almost perfect solution, of a milky color, greasy feeling, aromatic odor and pungent taste, neutral, sp. gr. 1.040. The solution may be reduced with water, or glycerine, or both, *ad libitum*, and used in all surgical or gynæcological cases requiring such dressings. It is a preferable solution.‖

Conclusions: 1st. Thymol solution cannot be prepared strong enough to cauterize. Thymol in substance (feebly) cauterizes.

2d. Thymol solution destroys fetor instantly and effectually.

3d. Thymol solution leaves the grateful odor of *thymus vulgaris*.

4th. Thymol solution heals wounds and ulcers more rapidly than carbolic acid.

*Volkmann's Series.

†Med. and Surg. Reporter, Vol. XXXVIII, p. 370 et seq.

‡See the Reporter's paper on Procidentia Uteri, in Med. and Surg. Reporter, Vol. XXXVIV., p. 443–6.

‖Since writing the above, a similar report has appeared in the Monthly Abstract for May, 1879.

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5th. There is no danger of toxic symptoms following the local use of thymol solution, and it is as safe as carbolic acid administered internally.*

XII. FUCUS VESICULOSUS.

This seaweed and its congeners belong to the natural order *algæ* or *fucoideæ*. It contains 0.719 per cent. iodine, and 0.603 per cent. bromine. *F. Serratus* contains 0.834 per cent. iodine and 1.007 per cent. bromine (Marchand).† All seaweeds contain appreciable quantities of iodine and bromine.

There is considerable difference of opinion concerning the therapeutic value of this remedy. Some say that it fattens lean people, others that it reduces fat people. Wilder's case gained four and Cowan's five pounds a week after the use of fucus,‡ and Chapman's lost sixty pounds in a short time. By comparison of the results obtained in the communications received on the subject, it appears that fucus is useless as a remedy for healthy (anti)-fat people. We have used the remedy carefully in cases of obesity and increased the weight in every instance; in one case *two pounds a week, as long as it was used.* The same case *lost four pounds a week* when placed on half-drachm doses of iodide potassium. Our observations have led us to the following conclusions:

1st. Fucus as an anti-fat remedy in healthy adipose tissue is as useless as damiana in loss of virile power.

2d. Fat tissue (healthy) may be increased or diminished by the use of fucus.

3d. Cold, torpid individuals, with cold, clammy skin, pendulous belly—those cases whose obese condition is of an apathetic or morbid condition—may be benefitted by fucus.

4th. The activity of fucus, as a remedy, must depend on its stimulating effects on the lymphatics and emunctories of the system.

Griffith,‖ in the interest of some patent nostrum manufacturer, wrote a monograph, and cannot bestow praise enough on his "pet" fucus for "dancing elephants." He says that fucus is a *sure remedy to reduce obesity*, at one place; and that it is *not a specific* and *may fail altogether*, in another. Inconsistency, thou art a jewel! That it fattens lean people and makes "fat people" fatter caps the climax. During the use of fucus —"anti-fat"—he regulated the "diet, exercise and rest," and we venture

*Medical and Surgical Reporter, l. c.
†Nat. Dispensatory, p. 650-1.
‡New Preparations, vol. II, No. II.
‖Corpulency, etc., by M. M. Griffith, M. D.

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the remark that "diet, exercise and rest" were *the* factors in reducing the obesity, and *this was ascribed to fucus*. The pamphlet was not written for the medical profession, but for "dancing elephants," bestowing great praise on an inferior remedy, claiming for it "anti-fat" properties, to gull very uncomfortable fat people, for the sake of filthy lucre. The preparation, as a remedy, deserves its merited oblivion justly; it was tried and found wanting. Fucus is a failure as a fat-reducing remedy, and much inferior to iodine, bromine and their salts. If the diet be well regulated, the exercise properly conducted, and only *very small quantities of liquids drank*, many obese people can reduce themselves to the "symmetry of the gods," without fucus, by "diet, exercise and rest" alone.

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ARTICLE XII.

A CASE OF TRIPLETS.

BY GEORGE SEILER, M. D., OF FOUNTAIN CITY.

Cases of triplets by the human female are very rare, and the case hereby presented to this Society is of peculiar interest, because of the position of the fœtuses, and the means which had to be resorted to in their delivery.

A German woman, Mrs. L. of Alma, Wis., was taken in labor on the fifth day of July, 1877. Upon my arrival, several hours after the pains had commenced, I was informed by the midwife that the membranes had ruptured spontaneously just before I was summoned. On examination, I found the abdomen very much distended,—so much that I at once suspected twins. I found one foot protruding through the os uteri, which was considerably dilated. Labor progressed well, and the delivery of this child gave no trouble. About five minutes after the delivery of this child, I made another examination, and found a sac-like substance, which proved to be the head of a macerated child, presenting. I could detect in this some movable bones, especially the corner of a somewhat quadrangular bone, which proved to be one of the parietal bones. The pains continued good, but this head did not descend, and all the traction I was able to make with the hand had do effect; so that I came to the conclusion that there must be some impediment in the way.

On further examination, I found the head of another child just above the promontorium of the sacrum, and impacted upon the neck of the second presenting child.

After waiting awhile, the condition of things not changing, I concluded to apply the forceps to the head of the third presenting child, which I did, and delivered the same without much difficulty. This child, as well as the one first delivered, was living. Soon after, pains set in, and a macerated fœtus, the second presented, was expelled.

The first child delivered, the largest of the three, is yet living. The second child, the smaller one, was never strong, and died at the end of three months. The macerated fœtus, judging from its size, could not have been dead longer than one month.

There were two amniotic sacs and two separate placentas; the first born and larger child was in one sac, and the dead fœtus and the smaller child in the other.

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ARTICLE XIII.

OVARIOTOMY.

BY KNUT HOEGH, M. D., OF LA CROSSE.

During the last couple of years I have had two cases of ovariotomy, in which, notwithstanding quite serious complications, there ensued so little fever that I am led, at the suggestion of the President of the Society, to submit a few remarks upon some important points connected with this serious operation, first giving as briefly as possible the details of the cases.

The first case was operated upon April 25th, 1877. The patient's age was twenty-six years. The enlargement was considerably greater than in a woman at full term of pregnancy. The distance from the enciform process to the pubis was 43.75 centimetres (17½ in.); circumference of the body across the umbilicus 110 centimetres (44 in.), across the waist 78.75 centimetres (31½ in). As an evidence of the displacement of the viscera by the large tumor, I may mention that the apex of the heart was felt beating against the wall chest 6.25 centimetres (2½ in.) outwards and upwards from the left nipple. The patient was quite emaciated, and her face wore the marks of long and intense suffering. She stated that she had enjoyed good health until her nineteenth year, when she was attacked by sudden pains in the left inguinal and lumbar region after considerable hard work. These pains left her, however, and she recovered her usual health, a couple of years afterwards. About five years before she came under observation, she noticed in the median line, immediately over the symphysis, a tumor of the size of an apple. It was not tender to the touch, and could easily be moved about to the sides and upwards. The tumor seemed to be without any influence upon the general health, which continued good. The tumor grew slowly but steadily. For the last four months it had grown rapidly. She described several attacks of what seems to have been circumscribed peritonitis. A short time before she came to my office she rode over a rough road, and had, subsequently, an attack of pain in her abdomen, tenderness and vomiting, that kept her in bed a few days. When she came under treatment her temperature was 100.5; pulse 96 to 112.

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I shall not enlarge upon the signs and methods by which the diagnosis was established, but simply state that after her temperature for several days had remained normal, the operation was decided upon. I had succeeded in getting rooms for my patient in a new house, where I knew there had never been an infectious or contagious, or even simply inflammatory disease. The furniture, including carpets, was removed from the room in which the operation was to be performed; all woodwork, as doors, floors and window-sills, was carefully washed; the ceilings and walls whitewashed; the room was for two days subjected to fumigations, first of sulphurous acid, and afterwards of chlorine vapors; the operating-table was disinfected in a similar and thorough manner; all instruments were subjected to prolonged heat twice the day previous to the operation; a suit of clothes was washed and ironed for my use during the operation. The professional gentlemen who had kindly offered their assistance were requested to have disinfected clothes for the occasion, and for at least a week previous to avoid contact with any zymotic disease, post-mortem examination, erysipelas, puerperal fever, pyæmia, etc. The patient's abdomen was washed with a solution of chlorine in water, and the hands of all who were supposed to come in even the remotest contact with the patient or the instruments, were immediately before the operation to be washed in soap-water, then in a solution of carbolic acid, and finally in a solution of permanganate of potash. A dish with chlorine-water was ready at the operating-table to dip hands, instruments or ligatures before introducing them in the abdomen. Present were the following professional gentlemen, to whom I am indebted for assistance and advice during the operation: Drs. P. S. McArthur, Ballard, Ottilie and Ober.

The operation was performed in the usual manner, beginning with an incision from the umbilicus to about five centimetres (2 in.) above pubis. It was found that the tumor was multilocular, and that extensive adhesions existed, so that it became necessary to enlarge the incision, through the abdominal wall, 6.25 to 7.5 centimetres (2½ to 3 in.) above the umbilicus, in order to detach the cysts from the parietal peritoneum and adjacent viscera, which was done, however, without resort to the knife. The omentum was partly torn in my efforts to separate, and a few bleeding vessels were secured by torsion; a part of omentum, which looked rather congested, was tied by two ligatures, and the part of omentum below them removed. Some bleeding vessels in the adhesions were ligated with fine silk dipped in chlorine-water; the ligatures were cut short, and left to remain in the abdominal cavity. When finally all adhesions were separated, and the cysts emptied,—not, however, without losing some of their contents in the abdomen,—the remaining mass of the tumor was lifted out. It was then seen that the pedicle was very

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short; the traction exercised upon it seemed dangerous. A cord was hurriedly slipped around it and tied firmly, as I believed, as a preliminary measure. The cystic mass was then cut loose from the pedicle, which was dropped in the abdominal cavity, when the cord slipped and quite a quantity of blood escaped, nearly filling the pelvic cavity in a moment. The pedicle was immediately grasped by the hand, and speedily secured by a double ligature of extra stout braided silk. Some pressure was exercised upon the sides of the abdomen, whereby a quantity of air and blood and cystic contents were driven out. The peritoneal surfaces were cleaned, as well as I thought possible, by means of sponges which had been previously disinfected and were constantly wrung out of chlorine-water. The wound was closed by silk sutures, which were made to carefully include peritoneum and all the overlying tissues. Before they were drawn tight a sponge was introduced in the abdomen to wipe out what blood or serum might have gathered while the sutures were being introduced. Outside of the sutures were broad strips of sticking plaster applied so that the ends crossed each other in front of the incision; over the plaster came a carbolized pad of cotton retained by a single bandage. The patient was then brought to bed, bottles filled with hot water were put along the extremities and the body, and as there was threatening collapse, a couple of teaspoonfuls of wine were given. When the patient recovered from the narcosis there was some vomiting and hiccups; pulse weak, 144. A mustard plaster was applied to the cardiac region, and ten drops of tr. opii were given. At seven P. M., about seven hours after the operation, the patient looked better, had no pain, but suffered from nausea, and vomited the few teaspoonfuls of water that were given; pulse 132, temp. 101.5. I ordered ice internally, and a linseed-meal poultice to abdomen. The patient vomited twice during the first night. The day after the operation she said she felt quite well, with exception of nausea; her pulse was, in the morning, 118, temp. 99.5; at night there was no nausea, her pulse was 128, temp. 100.5. The second day after the operation her pulse was 100, temp. 99.75 in the morning; milk-and-water were ordered, a couple of teaspoonfuls at a time; in the evening her pulse was 96, temp. 100.25. The third day pulse 90–96, and temp. 98.75 in the morning; in the evening her pulse was 96–100, and the temp. 99.5. The fourth day the sutures were removed; the wound had healed by first intention; the patient felt perfectly well; temp. 99.50 in the morning, 100.25 in the evening. Afterwards no unpleasant symptom made its appearance; the pulse remained quite frequent, but the temperature never afterwards exceeded 100° until complete recovery.

I shall not give the details of the other case, where all the above-mentioned precautions were taken to prevent infection. It was in every

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respect a very similar case, only the patient was more emaciated, the tumor yet larger, and the adhesions so firm and numerous that I at times despaired of the possibility of safely effecting the separation of the tumor from the adjacent viscera, as I constantly had to dissect, ligate small vessels, and contend with parenchymatous bleeding from large raw surfaces. There were also some pelvic adhesions, fortunately not very strong ones. The pedicle, which was about 7.5 centimetres (3 inches) broad, was secured by a double transfixed ligature of silk, cut short and "pocketed." Owing to the length of the operation, and the weakness of the patient, I was obliged to close the abdominal wound before all bleeding from the minute blood-vessels had entirely stopped. Still, the patient recovered completely within a short time, without ever complaining of any discomfort but hunger, and without any kind of medicine. Her temperature never exceeded 101.

I am very well aware that success in ovariatomy is the rule at the present day, and that my operations can claim no attention simply because they resulted successfully. But it seems to me, that they substantiate some of the comparatively recent ideas relative to the source of danger in this operation, and the manner in which it may be avoided. The time when any traumatism of the peritoneum was considered hopelessly fatal, has long since passed, and the generally adopted conception seems now to be, that peritoneum can bear clean cuts very well, and possesses as much tendency to heal by the first intention as any other tissue. The danger in opening the peritoneal cavity seems mainly to consist in the rapidity and completeness with which the healthy peritoneal surfaces are known to absorb every kind of effusion. The experiments of Penzolat and Wegener have sufficiently proved the enormous resorbing power of peritoneum, and the rapidity with which resorption takes place. Emmet of New York contends that it is septicæmia that is the great outlet of life in fatal cases of ovariotomy, and says so upon the strength of post-mortem results in his own and Spencer Wells' cases. He finds in the peritoneal cavity serum of a peculiar septic character. If there is, then, any inflammatory or septic effusion in the peritoneal cavity, there must follow, as a necessary consequence, fever, pyæmia, or septicæmia. The intensity of these processes will depend, in the first place, upon the amount and malignity of these inflammatory products; in the second place, upon the size and the condition of the resorbing surfaces. If the peritoneal surfaces are healthy, they resorb easier, quicker and more completely, than when the serous structures are mainly or partly changed to connective tissue, whose power of resorption certainly is considerably smaller than that of a serous surface. As an instance of the enormous resorptive power of

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the healthy peritoneum, I may adduce a case of the celebrated Edinburgh surgeon, Mr. Keith, where there were no adhesions, and where a healthy peritoneum, and very favorable circumstances, seemed to promise a good result; but where, in spite of this—or rather, as a result of it—diffuse peritonitis suddenly set in, and terminated the life of the patient in a very few days. When a separative or necrolic process takes place in a healthy peritoneum, the rapidity with which the products of these processes are resorbed, overwhelms the system, so that a fatal result rapidly occurs, while the resorption through a thickened and hardened peritoneum takes place slowly, and gives the system time to eliminate the poison through its different emunctories. It is of course not implied, that this operation is subject to no other dangers than those of resorption, but it is claimed that this is the great danger, compared with which the others are of secondary importance. It may therefore be said that success will depend mainly upon our ability to prevent inflammatory processes, and especially such as are connected with decomposition or sepsis. We know now that the mere contact of pure air is not sufficient to cause decomposition of the secretions of wounds, but hold that certain substances that may be in the air are necessary to produce this. What these substances are, we do not know, but numerous observations and experiments have made it probable that they are organic substances, exceedingly minute, destructible by high temperature and by certain substances, generally known as disinfectants. To have a name by which we can designate these hypothetical organisms, without committing ourselves about their qualities, etc., we have agreed to call them germs. It is supposed that such germs are very widely distributed through nature, and that they are most likely to be found where different kinds of excrementitious matter are present. One of the earliest heroes of American surgery, Ephraim McDowell, performed the operation several times, and had very good success, and that at an early day, when many of the safeguards that we now are acquainted with were entirely unknown, and before the technical part of the operation was at all developed. His success depended, in my opinion, next to his general skill and good surgical tact, upon his operating in a new, sparsely-populated country, where there yet were few of those infectious germs that constantly are produced where great numbers of men crowd together for any length of time. The great Spencer Wells mentions that he has had "runs of good luck and bad luck," and he has found that he has had his runs of good luck after cleansing, whiting and painting his rooms. Upon the above-mentioned theory depends Lister's celebrated and surprisingly successful method, and also the method that was adopted in my two cases, and for which I am indebted to the Ger-

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man surgeon, Alfred Hegar. Lister requires a disinfecting spray to play upon the wound during the operation, and some operators, among them the celebrated Marion Sims, have actually realized this with good results. Objections have been raised against this proceeding upon the ground of supposed danger from absorption of the disinfectant (carbolic acid is the only one actually used, as far as I know); but I do not believe that a single instance has been adduced where any dangerous consequences have been observed. Besides the great inconvenience of performing the delicate work of careful dissection, tying of small arteries, and the like, under the spray, there is another danger, in the chilling influence of the prolonged spray and the great amount of fluid that is blown into the abdominal cavity. To warm the fluid, as has been proposed by Olshausen, is well enough, but even this will not prevent the great withdrawal of heat upon the transformation of the water to steam; and this heat comes from the patient's body. The method that I employed is perfectly free from danger, but if it is equally certain to exclude the possibility of infection, will be decided by future experience. A necessary condition is a room that is clean, not in the common sense of the word, but *absolutely* free from any inflammatory or septic matter. In spite of a great many disadvantages, the method I employed was safe in my cases. I did not possess skill enough to prevent the escape of some cystic matter into the abdomen, which Dr. Goddard, in a critical review of Spencer Wells, says is *the* most important thing to guard against. I even lost great quantities of blood, a material that, more than any other, is apt to serve as a breeding-ground for germs. I had to leave a great many sutures, foreign bodies, in the abdominal cavity. And still no inflammation, and hardly a rise of temperature above the normal. In my second case, there were extensive raw surfaces, where bleeding had not stopped entirely when the abdominal cavity was sealed up, and still no fever. I cannot see any other way of explaining the successful termination of these cases, than the one I have indicated.

There are several points connected with the execution of this operation that yet are undecided by the profession. I will briefly mention some of them. It has been proposed to make an opening through Douglas's fossa into the vagina, and to insert a drainage tube, to give escape to exudations, or even to leave the lower part of the original incision open, and draw one end of the tube out there, while the other end might come out through the vagina. It is claimed, that by such means it would become possible to wash out the abdominal cavity. There are weighty objections against such a course, and I believe that their validity will be easily seen. The first is, that by the establishing a communication between the peritoneal cavity and the outside, we run the

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risk of admitting an infection after the operation that we may have succeeded in avoiding during the operation. The other objection is, that a complete cleaning out of the peritoneal cavity through a drainage tube is almost impossible, which experience has proved. The tube is very soon surrounded by granulations, that prevent the free exit of fluid through its lateral openings. I think that the same objections hold good against drawing the ligatures out through the lower end of the wound. There we run the additional risk of interfering with the bowels by the sutures. Various plans have been proposed for treating the pedicle. Keeping in mind the danger of inflammatory processes in the abdominal cavity, the method of fixing the cut end of the pedicle outside of the abdomen, and of stitching the wound hermetically around it, would, perhaps, appear as the most rational proceeding. And I believe it is so in those cases where there are no adhesions, and where no blood, serum or cystic contents have been effused in the peritoneal cavity, and where the pedicle is long enough to easily reach the abdominal surface. Under such circumstances, there could be nothing in the peritoneal cavity that could give rise to inflammatory action, if no poisonous or deleterious matter had been admitted during the operation. I should then use Atlee's clamp, or a similar contrivance. There are, however, surgeons whose names carry great weight, who think that the pedicle, under no circumstances, ought to be treated outside of the peritoneum, and who absolutely discard the clamp. In 1872, Dr. Marion Sims said that the clamp had seen its best days, and that the intra-peritoneal treatment of the pedicle would become the general rule. Dr. Emmet coincided with Dr. Sims in his opinion. However, when there are other possible sources of inflammation, such as the above enumerated ones, that cannot be removed from the abdominal cavity, I am unable to see the appropriateness of the extra-peritoneal treatment of the pedicle, as it seems that the danger of inflammation and sepsis must be about the same, whether there is a square inch denuded wound-surface more or less in the peritoneal cavity; all the while you have to take some chances from bleeding surfaces and retained serum. Under such circumstances I should even be inclined to look upon the extra-peritoneal treatment of the pedicle as an additional danger, without any compensation. There is always the possibility that the pedicle on the outside of the abdominal wall might, in spite of proper precautions, be contaminated by germinal matter, and assume inflammatory or erysipelatous action, or even become gangrenous, processes which through lymphatics or connective spaces might get admission to the abdominal cavity, and speedily lead to fatal peritonitis. The possibility of the detachment of the pedicle from the abdominal wall must also be remembered. In this connection I am reminded of a case that

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had proceeded well, until the clamp was removed, when a fit of coughing loosened the adhesions, and the result was fatal peritonitis. It matters not how carefully or closely the pedicle is stitched to the abdominal wall; a little oozing of blood, a mortifying shred of tissue, a small, hardly noticeable, foreign body, may give rise to suppuration, and open the gate for infection. I am aware that Spencer Wells, probably the highest authority upon the subject, employs the clamp in all cases, or at least did so until very lately. So did the late distinguished ovariotomist, Washington L. Atlee, and so does Graily Hewitt. But, on the other side, a great many surgeons do not, and they have also good results.

To sum up my opinion on this point, I think it is rational to use the intra-peritoneal treatment of the pedicle in those cases where there are adhesions, or where there has been the slightest bleeding or oozing of serum or loss of cystic contents into the peritoneal cavity. The clamp treatment—if employed at all—I should reserve for those comparatively few cases where there were no adhesions, and where the cysts were drawn out without the least difficulty.

How is the pedicle then to be treated? Some surgeons prefer to burn it off, for instance, Mr. Keith of Edinburgh, who prefers it to all other intra-peritoneal treatment of the pedicle. In view of many successful cases reported by Prof. Skjoldberg, I cannot deny that this method may have some advantages, although I should not like to trust an artery of the size of the radial, and sometimes greater, to the actual cautery. As to the final disposal of the burnt tissue, experience shows that it generally is incapsulated, and remains perfectly innocuous, but occasionally may lead to peritonitis, which then, according to circumstances, may become general or remain circumscribed, and finally open inward to the bowels or outward through an abscess, after the adhesions have separated the inflamed tissue from the peritoneal cavity. The experiments of Spiegelberg and Waldeyer on animals have proved that there usually follow no bad consequences from cauterization, but not by any means that we may reckon upon our ability to always avoid peritonitis. I must therefore say that I am no great admirer of the actual cautery as a means of arresting the bleeding and disposing of the pedicle. Sir James Y. Simpson secured the pedicle by means of a long acupuncture needle, and did so successfully. This method seems quite rational, and I think it might be employed when some reason existed to make ligature impracticable or doubtful. A highly ingenious method of treating the pedicle is the enucleation of the cyst, proposed by Prof. J. S. Minor of Buffalo, a method that has gained the support of Prof. Gailard Thomas, and been successfully employed by Dr. Samuel Logan, of Louisiana. The method consists in following the pedicle, as it spreads over the cysts, with the

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fingers and tearing it away from the cystic surface, upon which it is finally lost. By this operation no blood is started, as the vessels constantly diminish in size and finally become capillary. This method is a very good one, and does away with the necessity of leaving any foreign body in the cavity. The treatment of the pedicle with some form of ligature seems to be the most popular amongst those operators that pocket the pedicle. The substances used for ligature, however, have been manifold, as silver wire, catgut, silk, etc. The result seems to be about equal for all these substances, which have this in common that they are very unirritating if properly disinfected. The objection to silver wire is that it cannot be absorbed, and against catgut that it is liable to swell, whereby the knot may become loose, or even to be absorbed before the complete obliteration of the blood-vessels have taken place. Silk shares none of these objections, and as it is an animal substance as well as catgut, I cannot see why it may not in course of time be absorbed. Whipcord is used by Prof. Hamilton, and hemp thread by Atlee. There is another substance that, perhaps, might be properly mentioned, viz., the dried tendons of the deer, which I am informed the Indians use for sutures, and which a professional gentleman — whose name I regret to have forgotten — once mentioned that he had been using for the same purpose.

My final conclusion, however, is that I should prefer silk ligature as safe in every respect, and that enucleation ought to be tried when it was easy of execution.

There has also obtained some diversity of opinion whether the cut lips of peritoneum ought to be included in the suture of the wound of incision. I do not know why it should not, although, in opposition to Spencer Wells, Prof. Peasley never did it. The well known surgical author, Bryant, says it is immaterial whether it is done or not.

The different kinds of anæsthetics have also their advocates; thus Mr. Keith employs sulphuric ether; Spencer Wells, bichloride of methylene; Atlee prefers a mixture of one part of chloroform and two of ether, while some other authority uses one part of alcohol, two of chloroform, and three of ether, while others again, especially on the continent of Europe, rely upon the pure chloroform.

The diversity of opinion upon these minor points amongst able and successful operators gives us this lesson: that these points are of less importance, while the circumstance that they all, at least in practice, faithfully carry out true antiseptic principles, indicates that therein lies the secret of success.

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ARTICLE XIV.

CASE OF OVARIATOMY.

BY HENRY PALMER, M. D., OF JANESVILLE.

A maiden lady, fifty-five years of age, had an ovarian tumor of three years' growth, and experienced but very little inconvenience from it until two years from its first appearance, when it began to enlarge rapidly, and soon seriously affected respiration and the general health. As a palliative measure, tapping was resorted to, and fifty-four pounds of fluid evacuated.

During the fourteen months following, the tumor was tapped seven times, and from forty-two to fifty-eight pounds of fluid were removed each time, a total of three hundred and sixty-eight pounds during the period mentioned.

She had suffered from repeated slight attacks of peritoneal inflammation, and as the general health was becoming seriously impaired, the removal of the tumor was decided upon, and it was extirpated eighty days after tapping. It was a compound cyst, containing thirty pounds of fluid, and several small cysts, varying in size from a hickory nut to a large orange.

On making an incision into the peritoneal cavity, and exploring, the tumor was found to be firmly adherent to the parietal walls on the right side over an extent of surface six by eight inches. It was also attached to the liver along its lower border, three inches in length and from one-fourth to three-fourths of an inch in width. The adhesions were detached with the fingers, a steel sound and scissors, and the hemorrhage effectually checked by torsion of the vessels, except three of the cut arteries, which were quite large and required ligating. Carbolized animal ligatures were used for the purpose, and the ends cut close to the knot.

The pedicle, which was short and four and one-fourth inches in width, was folded upon itself, reducing the width to about two inches, and secured externally by a Spencer Wells' clamp. A drainage tube was inserted into the lower part of the incision, and the opening through the

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abdominal wall, which was seven inches in length, was closed with six linen sutures, which were introduced so as to include about one-eighth of an inch of the peritoneum, and an inch and a half of the skin on each side of the incision. The antiseptic method of operating was adhered to and antiseptic dressings applied.

The patient experienced some nausea for a few hours after operating, due to the anæsthetic agent used, but no febrile action, pain, tenderness, or distension of the bowels were present at any time during recovery.

The clamp came away on the eleventh day, and on the sixteenth day she was sitting up, the incision being closed and pedicle healed, and in three weeks she resumed her usual domestic duties.

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ARTICLE XV.

OVARIOTOMY—DEATH ON THE THIRTY-FIRST DAY.

BY WILLIAM FOX, M. D., OF MILWAUKEE.

Mrs. D., aged thirty-four, married, has had two children; the first five years ago, the second two years after. In person, a thin, slender woman of medium size, sharp features, sallow complexion, etc. Has always enjoyed good health, with the exception of periodic sick headaches, until after the birth of her first child, since which time she has suffered enlargement of the abdomen. She states that her attention was first directed to this enlargement directly after the birth of her first child, the abdomen remaining so large that the attending physician suspected twins. Medical treatment was instituted, which receives the credit of lessening for a year or so the size of the abdomen, or at least of preventing its increase, until another gestation, which terminated at full term, since which time she gradually increased in size, suffering from occasional pain, but not materially impaired in general health until about one year ago, when the attacks became more frequent and severe, and the increase in size more rapid and burdensome. At last the pain and discomfort became almost constant, confining her to her bed.

On my first visit, October 25, 1878, I found her suffering intense pain over a large portion of the left side of the abdomen. Temperature 103; pulse 120; respiration 30, and thoracic. This state of things soon began to subside, so that in a few days she was free from pain, but the discomfort continued greater than before the attack, necessitating a recumbent position. After she had sufficiently recovered to permit it, an examination was made.

The abdomen measured forty-two inches (about 1.07 metres) at the umbilicus, distinct fluctuation could be felt, and several cysts made out. The uterus was movable and less than three inches deep. The tumor could not be moved. An operation was advised, and to be done before another attack of peritonitis occurred; Drs. Senn, Meacher and Mason, who kindly saw the case with me, concurring. Accordingly, it was

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decided to operate ten or twelve days after the cessation of the next menstrual period, which brought the time on the third day of December, 1878.

The bowels were moved two days before by sal rochelle, and an enemata given the day of operation. The night before, the patient was given a warm bath, the abdomen thoroughly shampooed, then washed with chloric ether, after which a cloth wrung out of a five-per-cent. solution of carbolic acid was applied and changed occasionally. The operation was done antiseptically, strictly according to Lister, superintended by Dr. Senn. Present, Drs. Senn, Meacher, Mason and Bading, besides three medical students, and the attendants. The operation was begun a few minutes after three o'clock P. M. An incision about three inches (or eight centimetres) long was made in the median line, between the umbilicus and pubis, carefully down to the cyst. The peritoneum could not be recognized by any of us, and in searching for it with the director, after we felt sure that all tissues above it had been divided, we punctured the cyst wall, allowing the escape of some of its contents. We immediately plunged a Wells trocar into the cyst and allowed the fluid to escape as rapidly as possible, but even then we found difficulty in getting into the abdominal cavity. We extended the incision up to the umbilicus and down to within two inches (or five centimetres) of the pubis, and still found the cyst adherent, but finally were enabled to insinuate our fingers sufficiently to make a start, and by prolonged and persistent efforts separated the cyst wall from its parietal and omental attachments, which were more extensive and firm than we had ever before seen. I think this was the expression of all present. The pedicle was transfixed and secured by carbolized deer-tendon and dropped back into the abdomen, and the wound closed with deer-tendon sutures. The operation lasted over an hour. The shock was very great. The patient was put into a warm bed, with hot bottles about the trunk and extremities, four ounces (120 grammes) of beef tea injected into the rectum, and a teaspoonful of whisky given every five, ten or fifteen minutes, until four ounces (120 grammes) had been taken, and the patient had rallied. At 9 P. M., four hours after the operation, found the patient feeling pretty well. Pulse 150; respiration 25. The following table shows the morning and evening condition. The sac weighed six and one-half pounds (about three kilograms), and the fluid saved thirty-two pounds (about fourteen and one-half kilograms).

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Date.	Hour.	REMARKS.	Temp.	Pulse.	Resp.
Dec. 4,	9.00 A. M.	Rested pretty well last night; took 3-8 grammes morphine, in divided doses, three hours apart. A pint (57 litres) of milk, and whisky *ad lib.*, ...	100	140	20
	4.00 P. M.	Has felt well all day; taken milk and whisky freely; no anodyne.	99⅘	120	20
Dec. 5,	10.00 A. M.	Restless night; no pain; complains of nausea; discontinued nourishment by mouth; ordered beef-tea per rectum. .	99⅘	128	
	7.30 P. M.	Feels nicely; resumed milk in smaller quantities.	99	112	
Dec. 6,	7.00 A. M.	Vomited two or three times during the night; complains of feeling very weak; stopped all nourishment per mouth, and depended entirely upon injection of beef tea; moved patient to sofa, dressed wound and re-arranged bed; allowed a cup of strong tea, which she begged for. . . .	102	130	25
	4.30 P. M.	Feels well.	99	116	
Dec. 7,	9.00 A. M.	Feels splendidly; slept well last night; no pain; bowels moved naturally; drank a cup of tea; no anodyne; the beef tea continued.	98	100	20
	5.00 P. M.	Has had a good day.	100	100	20
Dec. 8,	7.00 A. M.	Slept but little last night; complains of excessive prostration, but no pain; exhaustion very much relieved by drinking freely of hot tea, which she begs for, and assured us would continue to relieve her and make her well, if we would allow it her when she felt the need of it; that she would not be faint if she would be allowed to drink all she wanted. . . .	101	112	20
	6.00 P. M.	Comfortable; no pain.	99⅘	96	
Dec. 9,	10.00 A. M.	Slept well last night; changed bedding, bandages, etc.; wound apparently healed; sutures nearly all disappeared, those remaining looked more like moistened slippery elm than like deer tendon. . .	99	90	20
	5.00 P. M.	Comfortable day; bowels moved; takes tea and crackers; continue injection of beef tea as usual.	99	90	20

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Date.	Hour.	REMARKS.	Temp.	Pulse.	Resp.
Dc. 10,	10.00 A.M.	Slept well; no pain; takes nourishment well; feels perfectly comfortable.	98⅘	90	
	5.30 P.M.	Says she is able to be up.	98⅗	94	
Dc. 11,	12.00 M.	Rested well; takes nourishment well, and reports about as yesterday. . . .	99⅖	94	
	6.00 P.M.	Has had a good day.	99⅖	94	
Dc. 12,	11.00 A.M.	Rested well; says she is all right; dressed wound; seems convalescent, with the exception of temperature.	99⅗	94	
	7.30 P.M.	Has had a nervous day; bowels inclined to move too frequently; complains of weakness, "an emptiness in bowels"; insists upon having the wound examined often; believes she is bleeding. . . .	99¾	102	
Dc. 13,	11.00 A.M.	Feels comfortable; bowels still disposed to move too often; discontinue injections.	98⅖	86	
	5.30 P.M.	Very comfortable; takes nourishment with a relish; is hungry; bowels less troublesome; seems now convalescent.	98	86	
Dc. 14,	10.30 A.M.	Restless night; takes food with a relish; feels very comfortable.	98	86	
	7.30 P.M.	Seems quite nervous; cannot sleep. .	99⅕	100	
Dc. 15,	12.00 M.	Slept better last night; demands more food, especially fluids.	99	90	
	7.30 P.M.	Had a movement of bowels, attended with pain, which was relieved by a little whisky; feels comfortable and hungry.	100⅘	100	
Dc. 16,	1.00 P.M.	Slept pretty well; bowels quiet; less desire for food.	99⅕	90	
	7.30 P.M.	Has some headache; feels weak; demands more fluid.	100⅗	100	
Dc. 17,	9.00 A.M.	Slept better; nothing to complain of.	100⅘	112	
	5.00 P.M.	Has been quiet all day; slept considerably; ordered quinine 3 grs. (.2 grammes) every four hours.	100⅗	100	
Dc. 18,	9.00 A.M.	Slept well; abdomen tender to touch, but no pain.	99⅕	96	
	7.30 P.M.	Slight headache; don't care to eat, but enjoys drink.	99¾	94	

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Date.	Hour.	REMARKS.	Temp.	Pulse.	Resp.
Dc. 19,	9.00 A. M.	No sleep last night; headache; drank milk freely.	99⅕	90	
	7.30 P. M.	Headache continues; feels badly.	99⅖	100	
Dc. 20,	9.00 A. M.	Suffered pain in bowels from eight to twelve last night; enema given, which brought away a great deal of hardened fœcal matter; immediate relief and sleep followed; complains of being very weak.	99⅖	99	
	7.30 P. M.	Feels more comfortable; drinks milk freely.	100⅖	112	
Dc. 21,	9.30 A. M.	Spent the greater part of the night taking copious injections and passing quantities of hard matter; has some pain in bowels.	99⅗	112	
	7.30 P. M.	Complains of great prostration or "emptiness."	99⅖	110	
Dc. 22,	9.00 A. M.	Spent another night as before, quantities of hardened matter being passed; is free from pain; takes nourishment well.	100⅗	112	
	7.00 P. M.	Comfortable to-day.	100⅕	100	
Dc. 23,	9.00 A. M.	Slept better; feels comfortable.	100	94	
	7.00 P. M.	Nothing to say.	99⅖	94	
Dc. 25,	11.00 A. M.	Restless night; shooting pains in abdomen; ordered ⅙ gr. (.08 centigram) morphia.	100⅖	120	
	8.00 P. M.	No pain.	100⅕	116	
Dc. 26,	9.00 A. M.	Slept some; very little pain; some nausea; feels weak.	99⅖	104	
	7.00 P. M.	Feels better.	99⅕	100	
Dc. 27,	9.05 A. M.	Had a better night; bowels moved twice without pain.	99⅕	102	
Dc. 28,	9.00 A. M.	No sleep; takes but little nourishment; feels weak; slight pains.	101	140	
	7.30 P. M.	Pain increased.	101	150	
Dc. 29,	9.00 A. M.	Slept very little; no pain; still weak,	99⅖	140	
	7.30 P. M.	No pain; still weak.	99⅖	140	
Dc. 30,	9.00 A. M.	Had some pain in the night; took 20 grs. (13 decigrams) hydrate chloral per rectum, but no sleep; takes whisky and milk.	100	150	25
	7.00 P. M.	Feels better; slept some during the day.	100	150	25

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Date.	Hour.	REMARKS.	Temp.	Pulse.	Resp.
Dc. 31,	9.00 A. M	Slept very little; bowels tender; had a sharp attack of pain; very faint. . . .	100½	150	
	7.00 P. M.	Feels a little more comfortable; abdomen distended and tender.	99½	140	
Jan. 1,	10.00 A.M.	Abdomen still distended, but not much tenderness; face flushed; rested pretty well last night after taking 20 gr. (1.3 grammes) chloral injection; vomited twice this morning; Terbuth strips applied over abdomen; 15 drops tr. opii given every three hours.	100	150	
Jan. 2,	10.00 A.M.	Rested well last night; had a depressed spell at nine this morning; no pain. .	100	140	25
Jan. 3,	9.00 A.M.	Had a restless night; great depression; feels very faint; vomiting constantly; no pain; intellect clear; sent for her friends; says she is dying. Died at 2.30 P. M., Jan. 3d, 1879, thirty-one days after operation.			

An autopsy was made about two weeks after death, the abdomen only examined. A great amount of fibrinous clots in different stages of organization, and several ounces of blood-stained fluid were found; also slight evidence of recent inflammation, but no pus.

I herewith present specimens of clot, together with the uterus, showing the stump of the pedicle, the examination of which reveals no plugged vessels. Accordingly, we conclude the cause of death must have been hemorrhage from the pedicle, in consequence of the too early disorganization and loosening of the deer-tendon ligatures, and we feel that had we used the clamp, or a more secure ligature, our patient would have recovered.

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ARTICLE XVI.

PLACENTA PRÆVIA.

BY G. F. HUNT, M. D., OF WEST BEND.

It will be remembered that last year I reported four cases of placenta prævia, and that I gave my ideas about the management or treatment of these rare, though interesting cases. I will now report another case, which has fallen under my observation during the past year.

On March 13th, 1879, I was called in great haste to see Mrs. K., aged about forty-two, and the mother of four children. Previous to my being summoned, a quack doctor had been in attendance for four days, remaining with the patient two whole nights during the time, and a part of the day time, assuring the patient and her friends that all would be well if they would only be patient. As to the fearful flow of blood, which blanched her cheeks and caused faintness to ensue, he quieted their fears by stating that the "bleeding was healthy," and all would come out right.

I found the woman in a most deplorable condition—almost pulseless, and hardly able to speak above a whisper. On inquiry, I ascertained that this poor woman had been flowing from Sunday, 7 o'clock P. M., until my arrival, on Wednesday, 3 o'clock P. M. On the introduction of my hand and removing the clotted blood from the vagina, I continued my examination, and found the cervix well dilated; and to the left and a trifle above the os internum, the placenta.

There had been no forcible pains to advance the labor, and from previous experience I believed it to be a good, safe practice to remove the placenta in advance of the child. I therefore proceeded to detach the placenta, and after an effort of about three minutes, succeeded in removing it.

On severing the cord immediately after the removal of the placenta, I found it apparently bloodless and shriveled, a pretty good indication that the child had been dead some little time. The pains soon came on, and in the course of about forty minutes the woman was delivered without the aid of instruments.

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I was pretty well satisfied that the child was dead on my first arrival, and was still more firm in that belief when I saw the anæmic condition of the cord after the removal of the placenta.

From the time of my first arrival till the close of labor, the patient took about a half-pint of whisky, diluted with water. As soon as possible I applied a compress of ice-cold water, and directed the nurse to make firm pressure over the wet compress, making a change every fifteen minutes for a period of two hours.

The patient continued in a very precarious condition for more than forty-eight hours, but after that time gradually rallied, and finally made a slow but good recovery.

REMARKS.

The flooding in this case came on at nearly full term, and without a moment's warning, and in enormous quantities, according to the report of the husband and the female attendant. It was after severe labor from quite a long walk.

The placenta in this case was not planted low, close over the os uteri internum, nor high up on the uterine wall, but intermediate between the two; that is, just above the os uteri internum.

It was one of those cases where you would expect to get hemorrhage two or three weeks before the full term This goes to confirm what I said last year in regard to these cases, "the higher up the placenta, the later in pregnancy will be the uterine flow," caused by the dilatation or expansion of the uterine walls, and not by their contraction.

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ARTICLE XVII.

REPORT OF SPECIAL COMMITTEE

Appointed to Consider "the Best Means for Preventing Quackery, and to Prevent Unqualified Persons from Practicing Medicine in the State of Wisconsin."

BY E. W. BARTLETT, M. D., OF MILWAUKEE, CHAIRMAN OF COMMITTEE.

At the last meeting of this Society, a committee of five was appointed to consider the best means for preventing quackery, and to prevent unqualified persons from practicing medicine in the State of Wisconsin. This resolution is aimed at quacks and unqualified persons. Now, a quack is a person who boasts of skill or knowledge which he does not possess, or, in other words, he is a boastful, unqualified person, and we may therefore give our whole attention to the last clause of this resolution.

Let us then consider:

First. Who are the unqualified persons practicing medicine?

Second. How many are there of them?

Third. What harm do they do to the people?

Fourth. How do they harm qualified doctors?

Fifth. What ought to be done to stop unqualified persons from practicing medicine?

The most harmful class of persons practicing in Wisconsin is that composed of doctors who have never studied at all; who have commenced, perhaps, by doctoring horses and cattle; have got a "doctor-book," and have extended the sphere of their activity to treating anything they could get to treat, making up in cheek, assertion and boldness, what they lacked in knowledge. They have never studied anatomy, physiology or chemistry. Their mother-wit helps them to explain to the patient what the matter is, as best they can, for they are not able to examine heart, lungs or liver, but tell the patient where the disease is as soon as the seat of pain is mentioned. This class of men, who have not studied at all, is quite numerous. There are several in Milwaukee County, who

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have become quite prominent, and have large practices. The class of people that employ them are for the most part the poor, hard-working and unintelligent class, who pay their money and try their remedies, and though disappointed in not receiving any benefit, they are just as ready to invest in the next wonderful "natural doctor," with just about as much forethought as the man who invests in a lottery ticket. There are poor people who have given the earnings of years to these leeches without the slightest benefit. A large number of these unqualified doctors travel about from place to place, advertising wonderful cures, "consultation free—no cure—no pay"; but by methods of which you have all heard from patients who speak feelingly, they manage to fare sumptuously every day, and get their patients in condition to leave remarkably quick. Their patients, however, groan as if a blister plaster had been spread all over them, when they count the cost of the little package of greens given them by the "complete herbalist," or wonder how that qu—ack chief of the Ogallala Sioux "played roots" with them. These fellows do immense harm. It would be interesting to know how many are traveling about in the different parts of the state at the present time, and how many different tricks they are at.

The next class consists of students who have studied for a while in a doctor's office, or who have taken one course of lectures, and for want of money, or other reason, have gone into practice until they could find money or time to finish. This class is not very numerous, though I am told that in the northern part of the state there are a great many undergraduates practicing. The druggists are the most numerous class of unqualified persons who practice, though I am happy to say that there are a great many who do not prescribe at all. They are continually handling medicines under the directions of doctors; they consult the United States Dispensatory continually, and they are required to know for what diseases medicines are usually prescribed, and in what dose it is safe to give them, and from patients that bring prescriptions, they can easily find for what they were made, and afterward if the case was cured. This knowledge they are not slow in using — they judge who is the best doctor, and they can prescribe just like him; but if they do not succeed they send the case to the doctor, who, glad to receive a case, does not dare to complain that valuable time has been lost or other mistakes made. The fault of the druggists is that they prescribe without properly examining their cases to know really what the matter is; they do not know how to examine; their education does not fit them at all for making examinations for diseases. They can only adopt a plausible theory, and give something for which they can get money. It seems to be the general

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custom in this state for druggists to prescribe all they can and control as much medical practice as possible. In many cases the people go to the druggist first, and if he does not seem to understand their case they then consult a doctor, oftentimes the one recommended by the druggist. It seems to us that the doctors write too many prescriptions and leave the preparation of their medicines too much in the hands of persons who can not be held responsible. If physicians would prepare and dispense their own medicines they could assure themselves of their quality and quantity, and improve their appearance and taste, and make them more acceptable to sick and particular people.

Many druggists guess at the weight and quantity of medicines. Many have no small scales and weights with which to weigh small quantities accurately, and mistakes are continually happening both in regard to quantity and quality. People are naturally alarmed at this state of things, and prefer to employ physicians who dispense themselves, and for two important reasons, viz., that no mistakes are ever known to occur, and that the doctor and medicines cost so much less—only about half as much. One of the strongest recommendations of the other school of medicine by their patients, is that they prepare their own pellets and dilutions themselves very carefully.

I can best represent the relation that exists between doctor, patient and druggist, by a story told by a Milwaukee apothecary. An old customer noted for his impecuniosity came into his store one evening, fumbling some papers, and handed out three prescriptions written by three as good doctors as the city affords. He asked the druggist if he would be so good as to look them over, and see which was the best. They were all written evidently for the same thing, and the Irishman added that he had been to those three doctors to see who would treat him the best. He had bothered each one for an hour or more with his troubles, and given to each a generous "God bless you," and then gone to the druggist to have his troubles again examined, and the doctors' ability compared.

What harm do unqualified doctors do to the people? (The committee collected a large number of flagrant cases of malpractice by unqualified persons, in some of which life had been lost, but thought best not to publish it.)

How many unqualified persons are practicing medicine in Wisconsin?

We have no means of securing exact statistics, as we will explain; but as near as we can find, by canvassing and corresponding with those who ought best to know, there are over two thousand, probably about twice as many as of qualified doctors. In regard to the statistics here desired, there are no means by which we can get exact information without very great trouble and expense; there are so few medical societies to help us. The

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Rock River Medical Society is the only society in the eastern part of the State that pretends to be organized under law, and we have not heard of any other. If we only had county societies in each county, each sending delegates to the State Society, it would be very easy through them to get all the information we need on this and kindred subjects. Why do people employ unqualified men? Because they are not able to distinguish who are qualified, nor do they see the danger to which they expose themselves. Unqualified men who succeed in acquiring practice are, as a rule, good talkers, shrewd and cunning. They explain what the matter is in some way, and tell how the remedies work, and people like to hear it, though they get no meaning out of it. The greatest incapable in Eastern Wisconsin lost a case by consumption not long ago, and as he had not agreed with the other doctors, and still the case died under his treatment, he was allowed to make a post-mortem; and much to the satisfaction of the friends, informed them that the patient's lungs had all grown on to the inside walls of the chest, and it was a wonder he had not died before. Little they knew that this was most always the case in consumption. His strong point is in giving a plausible reason whenever he fails—and he fails often.

Incapables exaggerate their cases, as a rule, and play on the fears of their patients. They call every sore throat diphtheria; a little fever, typhoid; any trouble about the lungs is lung fever, etc., etc., and the common people are entirely unable to detect the deception. If they were able to distinguish what the disease is, then they could treat it, and would not need a doctor. They judge the doctor by his dress, personal appearance and good address, and if they like him as a gentleman, they like him as a doctor. Why should they desire to employ unqualified persons to attend them in disease and hazard their lives? I can see no sufficient motive, and believe people usually employ the physician whom they think most capable by education and natural ability to attend them, and the decision as to who are qualified, and who are not, must be left to persons much better informed on the subject than the people. I would advise all who wish to read a very instructive book on this subject, to procure "Currents and Counter-Currents," by Prof. O. W. Holmes.

The unqualified doctors do great harm to those who are qualified, by bringing discredit on the profession in general, by destroying confidence in it. How can intelligent people have confidence in a profession when the majority of its members resort to such tricks as does ours? A profession must be educated and honest in order to merit confidence.

I trust I have said enough to arouse you to a consciousness that something decided ought to be done to stop this great and fearful evil, and

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this State Medical Society, which is the only large medical association in the State, should be the first to act, because its members have greater occasion to see the baneful effects of this dabbling in human life by unqualified persons. We ought to ask all right-minded, intelligent people, who desire to preserve life and diminish the amount of human suffering, to join with us in so humane an object. Among other things, the preamble of the constitution of this Society states that we associate ourselves together "to protect ourselves and society against the impositions of medical pretenders." It is our duty, then, to move in this matter among the people, because we are more cognizant than they of the extent of this evil. The people do not move, because they do not know of these facts. They are not able to attribute the result in any case with certainty to the attendant.

In conclusion, I would recommend that this society ask its members in the different counties to form county societies, under the present law of the State, Revised Statutes, Chap. 58, and that a committee be appointed to get county societies formed where there are none; and that these county societies be invited to send delegates to this society hereafter, as the above-mentioned law provides. This law provides that where there are not enough doctors in one county, two or more counties may join together. Next, that the name of this Society be changed so as to conform to the reading of the above-mentioned law, and that it be composed of delegates and permanent members, so that our constitution may conform in every particular to the reading of this law. The reasons for making these recommendations is that we desire to see this Society become a legalized body and a power in the State, with its subordinate societies exerting an influence in every county, town and hamlet.

I recommend that this Society endeavor to secure the passage of a law, to be entitled, "To prevent unqualified persons from practicing medicine or surgery in the State of Wisconsin," and that a strong committee be appointed to secure its passage; that the Society pledge itself to support this committee to the best of its ability, and that it place a sum of money, not to exceed $100, at the committee's disposal, so that it may be able to secure the services of a lawyer and carry on the correspondence necessary, without too much expense to itself.

This law should state that a qualified person is one who has a good English education, has studied medicine at least three years, has attended two full courses of lectures and instruction during these three years at a reputable incorporated medical college; who has dissected the whole of the human body under a competent teacher; who has been examined and found proficient, and received a diploma from the school at which

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he last attended a full course of lectures; who has the use of his faculties and senses, and natural ability enough to apply intelligently that which he has learned. The law should require every physician to fill out a blank and swear to its accuracy, and cause it to be registered, stating his name, with place and date of birth, where and when he received his preliminary education; where and when he received the different steps of his medical education as above described, and where he had been in practice; and none but registered physicians should be allowed to testify in court or collect fees.

The law should punish every unqualified person who practices, except those who commenced before a certain specified time, and should include all the incapables possible, and yet get the law passed. We doubt whether a law could be kept in force that went back more than three years, or to January 1, 1876; and we really desire to act for the future rather than for the past. To execute this law a board of examiners should be appointed. If any physician should show gross ignorance of his profession, on complaint of a certain number of persons this board should examine him, and if they find him unqualified he should not be allowed to practice in Wisconsin until he qualifies himself.

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ARTICLE XVIII.

OSTEOCEPHALOMA OF THE THIGH.

REPORTED BY J. G. MEACHEM, JR., M. D., OF RACINE.

On the tenth day of March, 1877, George G——, a young man of about twenty years of age, of German descent, came to my office to consult me about a tumor of his left thigh. He stated that for several years there had been on the outer side of the thigh a flat bunch, oval in outline, about two inches in diameter, which up to six months previous had given him no trouble, and had shown no signs of growth, but at that time, September, 1876, after violent exercise by jumping, it began to grow and had continued its development until the present time.

An examination of the tumor located it on the outer side of the left thigh, occupying the middle two-fourths in length, and firmly adherent to the bone. Its transverse diameter was greater than its anterio-posterior diameter, thereby presenting a broad flattened aspect. Its upper half was harder and less elastic than the lower part, and its general form was globular. The surface was somewhat lobulated, purple in color, smooth and glossy, having numerous tortuous veins ramifying over it. The thigh was not at all increased in size along its inner line, and but slightly enlarged in front or behind, but outward the growth stood prominent and bold.

A measurement around its largest part at the middle of the thigh gave twenty-five inches; two inches below this it measured twenty-two inches, while two inches lower still it was only fifteen inches, the natural circumference of his thigh. Some, though not severe, darting pains were felt in the tumor, but it was complained of most as an encumbrance by its size and weight.

The physical powers of the body at this time were somewhat enfeebled, and there was emaciation, notwithstanding the subject was always thin and spare, weighing but one hundred and nineteen pounds when in health. The countenance was pale and expressive of anxiety and suffering, evidencing cachexia. The patient, however, regularly followed his usual occupation, that of engineer, and walked nearly a mile to and from the shop in which he was employed.

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The one thought in my mind regarding this large and rapidly growing tumor was, that it was osteo-cancer, already beyond the reach of human aid. M. Amedee Forget, a French surgeon, in speaking of malignant osseous growths, asks this question: "Are there not, in the present state of science, clinical characters indicating to the surgeon whether or not to operate?" In this case, it seemed to me that the rapid growth, the peculiar form, the pain, the evident cachexia and emaciation, and the unfavorable location, were clinical characters enough to indicate the best thing to do, namely, let it alone. It was too large to be removed in any way, except, perhaps, by amputation at the hip-joint; but, considering the very great danger to life attending that operation, together with the probable infiltration of cancer-cells in the adjoining parts, it seemed best and consistent with good judgment, to discourage surgical interference and experiment, and to advise him to enjoy, under palliative means, his remaining months or years as best he could.

About four weeks subsequent to this he called again. There was no special change of growth in size or appearance. My father, Dr. J. G. Meachem, was present, and concurred in the diagnosis and advice I had previously given. Photographs of the tumor, made at that time, I now show you.*

Eight months had passed when the patient again came under observation at the office. During the time he had been subjected to all kinds of treatment by the usual number of medical pretenders that follow up a lingering, incurable case. His condition was one of greater weakness than before, with much more marked emaciation; the skin was of the hue peculiar to cancer-cachexia, and the suffering was more acute and severe. The growth had extended below nearly to the knee, and above to the hip, but did not yet interfere with motion in either joint. It also had overlapped the thigh anteriorly and posteriorly to its inner line. It now measured thirty-six and one-half inches in circumference at its middle, and thirty-two inches around two inches lower down, having, therefore, increased eleven and one-half inches, and this increase relatively the same throughout the entire mass. An appearance of still greater size was manifest in contrast to the greater emaciation of surrounding parts. A second photograph was made, and by comparing one with the other, the real increase is plainly shown. Up to this time he had followed his work, but now was obliged to remain at home, its bulk preventing locomotion.

*Photographs were exhibited showing anterior and posterior views.

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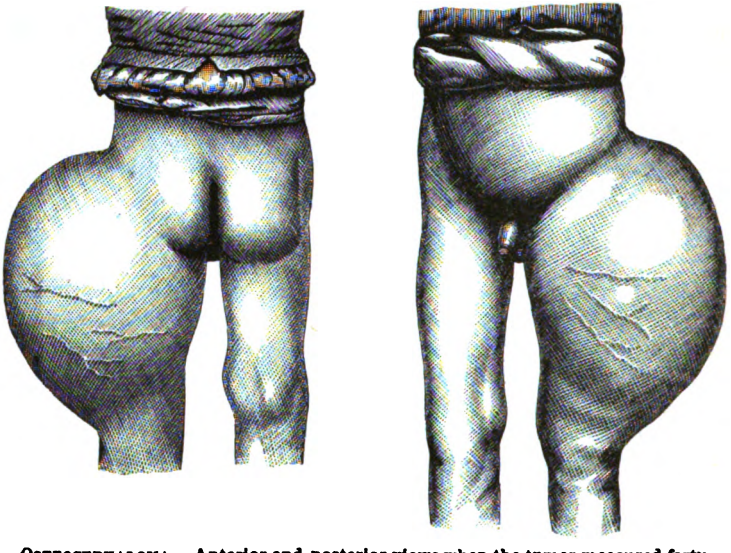

OSTEOCEPHALOMA.—Anterior and posterior views when the tumor measured forty inches in circumference.—From photographs.

During the next two months it increased to forty inches. His weight at this time was one hundred and eighty-nine pounds. From this on for six months the usual condition of progressing emaciation and weakness continued, while the morbid growth enlarged day by day until it reached a size measuring fifty-eight inches (*nearly five feet*) in circumference. It now obliterated every natural outline of the thigh, hanging down over the knee, and encroaching on the abdomen above. The relative shape was retained throughout its development. The skin was still intact, though very thin, and from the peculiar velvety feel in places I think ulceration would have occurred soon. There was also evidence of deep fluctuation.

I believe pus is seldom if ever found in malignant growths, for the simple reason that the action is not inflammatory but rather a process by which the cells assume such a property of self-multiplication that their normal relation and mode of arrangement is destroyed. (Bennett.)

Dr. F. H. Hamilton says that portions of the tumor have usually an elastic feel, leading often to the suspicion that it contains pus. The word "suspicion," I take it, refers to a supposed existence of something that does not exist, and that in these growths pus will not be found. Not unfrequently, however, small cavities filled with clotted blood, dirty-looking serum, or soft, gelatinous matter are formed within them (Gross); and a

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knowledge of this, together with a consideration of the vitality of the patient, caused me to refuse a demand to puncture the mass, and to insist that it be allowed to take its own course.

A friend of the young man called another practitioner to see the case, who at once plunged a trocar deep into the softened portion, giving escape to about six quarts of dark-colored watery fluid. There was but little change in shape on the escape of this fluid. The water of decomposition and the serum of the blood dripped constantly from the opening, draining his life away. Air entered the cavity, hastening decomposition; gases formed rapidly, and it was amid a stench unbearable that death came to his relief on the fourth day. I was not present when the puncture was made, but from the young man's mother I ascertained the amount of fluid that escaped at the first gush.

Twenty-four hours after death I was sent for to incise the tumor (which I did), to facilitate the placing of the body in the largest size coffin made. Circumstances and conditions were such on that day that no satisfactory post-mortem examination could be obtained. The day following the interment it came about that the relatives of the deceased should exhume the body and grant me permission to remove and have the tumor and thigh-bone. The body was exhumed, and I disarticulated the thigh.

The cavity seemed hardly large enough to have contained the quantity of fluid said to have escaped when tapped. It still held a little dark grumous fluid, such as results from disintegration of tissue; also some soft, white, brain-like matter, but no pus was to be seen. Throughout the entire mass were numerous pieces of cancellated bone-structure that had been formed in the progress of the disease. They radiated in every direction, uniting themselves one with another, forming a framework to the entire growth. The interspaces were gelatinous and brain-like, only a limited amount of cartilage being observed, and that in the upper part. The muscular structure was past recognition. The soft parts were under rapid decomposition, and it became necessary to hasten maceration.

The femur, as cleaned, shows that the disease involved nearly the entire bone; a small portion of the lower end, and the articular cartilage of the head of the bone, alone being exempt. This latter corresponds to a fact pointed out long ago by Petit, "that although the epiphysis may have been completely converted into encephaloid matter, the cartilage of incrustation and of the neighboring joint never becomes implicated, and this, although the growth may eventually involve and include the whole of the rest of the articulation by extension to the capsule and the soft parts." (Erichsen.)

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The shaft at its middle was bent and twisted upon itself about forty-five degrees, probably by the great weight of the growth dragging it outward and backward. Radiating spicula stood out in all directions from the entire surface of the shaft. There were also pillar-like projections reaching outward to the cancellated formations, bracing and supporting all. The greatest density of bone was behind and below the trochanter major, which, corresponding to the point first complained of, would seem to locate the original site of disease, from thence extending down along the shaft. Morbid action undoubtedly began beneath the periosteum. During maceration, large numbers of pieces of cancellated bone separated from the femur, and I present them here with the femur, for your inspection, to-day.* Portions of some of them have become compact bone structures, and several others have calcareous deposits upon their surfaces.

The lowest two inches of the femur is much broader and thicker than natural, not wholly from the disease, I think, but from a peculiar development belonging to a heredity that exists in the family, about which mention will be made further on.

A photograph of the bone, made to a scale of one-fourth inch to the inch, shows the enormous bulk of osseous structure belonging to this pathological specimen. The comparative size is seen by the natural femur at its side.

The nature of the growth was unquestionably cancerous, and known as osteocephaloma. It could in no wise be confounded with any other growth, except that form of enchondroma, where portions of the cartilaginous element become converted into bone, and when by a certain softening, some of the characteristics of soft cancer are presented. Indeed, there are several conditions common to both. The shape or form may be globular, ovoid or lobulated in both. The surface may present the same smooth, tense, glossy appearance. The soft feel, or high degree of elasticity in either, may convey a sense of fluctuation. The tendency to take on rapid growth in one, is kindred to that of the other. But in addition to the similarities, there is in our case sharper pain, which is a very marked accompaniment in cancerous affections; an unusually rapid growth (two and one-half years), not so common in cartilaginous developments; an emaciation and cachexy peculiar to cancer; and on section a small amount of cartilage, and a great amount of gelatinous and brain-like matter found, all giving greater probability of the presence of encephaloid disease. If the presence of fluid within the growth suggests to the minds of any of you cystic disease or cystoma, I would say simply that there was no membranous or osseous envelope, without which there could

*Pieces of all sizes, sufficient to fill a half-peck measure.

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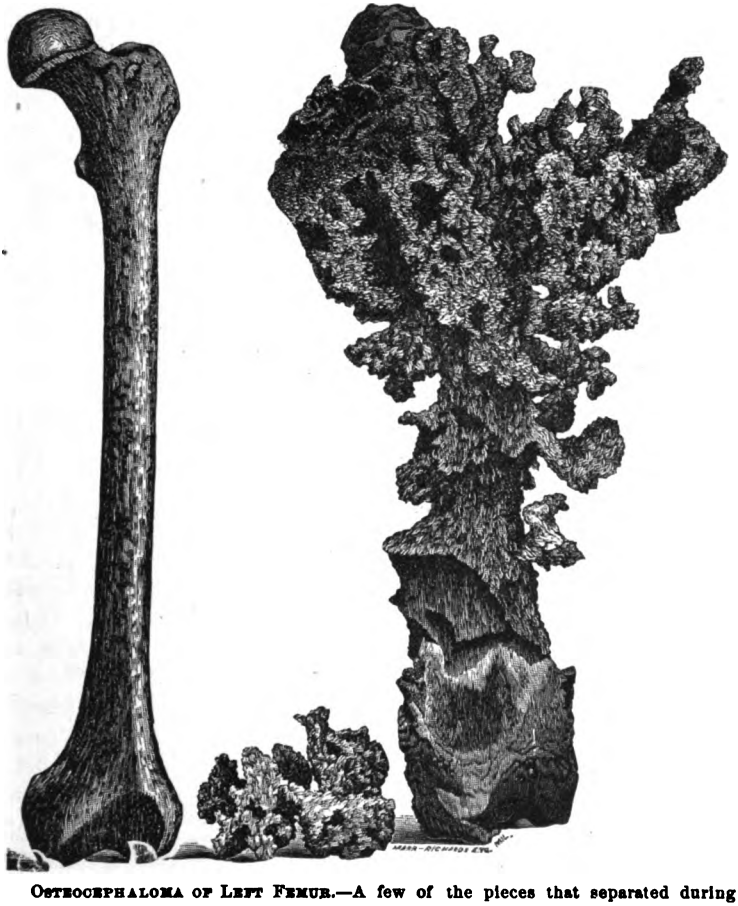
be no cyst. Central softening of the mass gave opportunity for the accumulation of fluid, under the same laws that govern the passive accumulation of fluids in the natural serous cavities of the body when there is existing neighboring disease.



OSTEOCEPHALOMA OF LEFT FEMUR.—A few of the pieces that separated during maceration shown. A natural femur to show contrast. From photograph.

The remarkable size of morbid growth I would specially notice. Upon this point I have taken pains to consult such authorities as have been at my command, namely: Mott's Velpeau, Druitt, Erichsen, Gross, Hamilton, Bennett, Holmes, and Agnew, and about one hundred volumes

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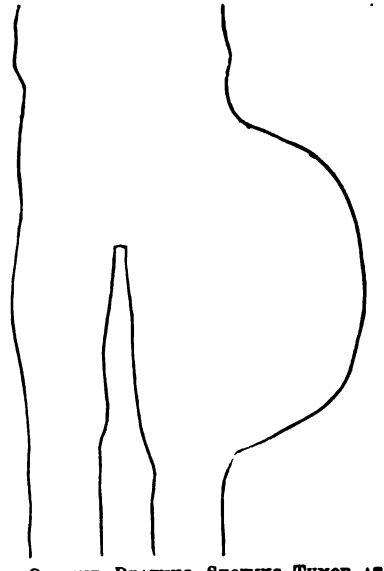
of different medical journals. Most of these authors use expressions wholly indefinite, such as "considerable size," "large bulk," "great magnitude," "extraordinary development," etc., etc. A cocoanut and child's head are instanced as representing the size of large osseous tumors. In the Chicago Medical Journal and Examiner for December, 1877, is a synopsis of a case of malignant osseous tumor of the femur that measured twenty-five inches in circumference. In Dr. Druitt's Surgery, edition of 1867, mention is made of a case of enchondroma by Dr. Frogley that reached a circumference of three feet, and another by Dr. Paget that was as large as a man's chest. These examples of large tumors are far short of the size of the one under consideration, and I am bold to say, that so far as I can ascertain, this is the largest growth from diseased bone that has been brought to the attention of the profession.

Its weight I have estimated to have been at least *one hundred and twenty-four pounds*, and this estimate is based upon the knowledge of the weight of the patient in health, one hundred and nineteen pounds, and when the tumor measured forty inches, one hundred and eighty-nine pounds, an increase of seventy pounds at that time. A further increase of growth of ten inches in circumference adds one-fifth in bulk, and weight fourteen pounds. The general emaciation of body usually amounts to between three and four ninths of original weight, which would be from forty to fifty pounds. These sums, seventy, fourteen, and forty at least, aggregate a weight of one hundred and twenty-four pounds. This morbid growth, then, attained a weight greater than that of the healthy man himself.



OUTLINE DRAWING SHOWING TUMOR AT DEATH.—Fifty-eight inches in circumference. Two years and two months of active growth.

I have now given the history and course of this case as they have come under my observation. I wish now to show a heredity that had much to do with the remarkable development just considered. On the mother's side I find nothing relative to any heredity, all having lived to good old age. On the father's side I find that all the ancestors were short-lived

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people, very few living more than fifty years. The father belonged to a family line, in the mining regions of Dolheim, Prussia, that had intermarried for several generations. He was feeble when born, and was seven years of age before he could walk; and as he grew to manhood, he was unable to do vigorous work, and was exempted from the required term of service in the Prussian army. His joints were large, loose and clumsy and the protuberances of the bones unusually prominent. A brother and sister had similar peculiarly-formed joints. He was the father of twelve children, and in them is shown in a remarkable way the heritage transmitted through a diseased parent:

C—, first child, dead, had enlarged ends of tibia and femur at knee-joints.

M—, second child, dead, had large broad knees, with loose articulations.

J—, third child, dead, constitutionally feeble.

J—, fourth child, living, has flat, broad knee, condyles very prominent.

C—, fifth child, living, has an exostosis one and one-half inches in diameter on outside of right femur.

G—, sixth child, the subject of this paper. In addition to the tumor described, there was an exostosis two inches in diameter projecting an inch above the surface, on the inner side of right tibia, as shown in the photograph.

L—, seventh child, living, has a sesamoid bone on the inner side of left knee, apparently in the tendon of the sartorius muscle as it passes behind the inner condyle of the femur. General health feeble.

M—, eighth child, living, has a sesamoid bone near left ankle-joint.

M—, ninth child, living, natural.

S—, tenth child, living, has an unnatural articulation at fifth metacarpo phalangeal joint of left hand.

J— B—, eleventh child, living, natural.

P—, twelfth child, living, natural.

It will be seen, therefore, from this list that nine of the twelve children have shown visible evidence of heredity in enlarged or malformed bones. Nor is this all; a child, now dead, born to C——, the fifth child, had congenital exostosis on the shaft of the right ulna. And the peculiarly formed knees, common to so many of the family, are observed in a second child now living. This is evidence of heredity in three successive generations to my knowledge.

It is not probable, however, that this hereditary predisposition to localize deposit of bone material has to do with the malignancy of the growth described, but it has much to do with its unusual size and the

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formation of the bony structure within it, conjointly with the progress of the more active cancerous affection.

The lower extremity of the bone, as shown in the photograph, is more than twice as large as a natural femur at the same point. This is partly due to hypertrophy from disease; but in addition it represents the peculiar form and shape of the extremities of the bones at the joints referred to when tracing the family history. To sum up the interesting points of this case, we may notice:

1st. The existence of an exostosis excited to active growth by violent exercise, augmented by a hereditary tendency to deposit bone material, and finally degenerating into a condition of malignancy.

2d. The site of disease. Osseous tumors of the femur generally appear on the inner side at the lower extremity of the bone. This had a directly opposite location, appearing on the outer side at the upper extremity.

3d. Rapid growth; which in two and one-half years attained a size measuring fifty-eight inches (nearly five feet) in circumference, and a weight of one hundred and twenty-four pounds; and

4th. The awakening of a heredity shown in three successive generations, that in this case was roused to action under proper cause and conditions.

Besides the regular physicians of Racine, Dr. E. B. Wolcott, of Milwaukee, saw the tumor when in an advanced stage of development.

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ARTICLE XIX.

REPORT OF SIX CASES OF LITHOTOMY.

BY WM. MEACHER, M. D., OF PORTAGE.

CASE 1. W. B.; residence, Columbia Co., Wis.; occupation, farmer; age, 22 years; operation, 1863; kind of operation, lateral; formation of stone, phosphate and triple phosphate of lime; weight of stone, 265 grs. (17.107 grammes); anæsthetic used, chloroform. Recovered.

CASE 2. A. L.; residence, Randolph, Dodge Co., Wis., but this patient had very recently come from Minnesota, where the disease was contracted. Age, 11 years; operation, August, 1870; anæsthetic used, chloroform; kind of operation, lateral; formation of stone, oxalate of lime; weight of stone, 75 grains (4.86 grammes). Recovery rapid and complete.

CASE 3. O. J.; residence, Randolph, Dodge Co., Wis.; occupation, saloon-keeper; age, 25 years; operation, Jan. 22, 1874; anæsthetic used, chloroform; kind of operation, lateral; formation of stone, phosphate of lime; weight of stone, 110 grains (7.128 grammes). Recovery good.

CASE 4. D. J.; residence, Springvale, Columbia Co., Wis.; occupation, farmer; age, 65 years; operation, Aug. 10, 1874; anæsthetic used, chloroform; kind of operation, lateral; formation of stone, triple phosphate of lime; weight of stone, three ounces avoirdupois (85.05 grammes). Recovery, with fistulous opening into rectum, owing to sloughing in wound.

CASE 5. W. L.; residence, Caledonia, Columbia Co., Wis.; occupation, farmer; age, 23 years; operation, June 26, 1876; anæsthetic used, chloroform; kind of operation, lateral; formation of stone, uric acid; weight of stone, 120 grains (7.776 grammes). Recovery rapid and perfect.

CASE 6. A. H.; residence, Portage City, Columbia Co., Wis.; age, 16 years; operation, Jan. 10, 1878; kind of operation, lateral; anæsthetic used, chloroform; formation of stone, uric acid; weight of stone, 95 grains (5.832 grammes). Recovery complete in from three to four weeks.

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These patients are all living and, with one exception, in the enjoyment of good health. The one exception is the old gentleman with the fistulous opening into the rectum.

In connection with the report of these cases of lithotomy, I wish to say a few words concerning diagnosing and finding stone in the bladder. I will be very brief.

I am well aware that every practitioner cannot be competent to operate for stone, but the ability to diagnosticate and find a stone may not come amiss to any physician. There are a few very prominent points among the symptoms of urinary calculus: 1st, frequent and painful micturition, the pain principally at the last of the act; 2d, stopping of the stream after starting; 3d, pain at the end of the penis; 4th, increase of the above symptoms, if the patient attempts to ride on horseback, or in a wagon or buggy. Perhaps the most significant symptom of all is the stopping of the stream after starting. Of course, a patient may have one or more of these symptoms and not have stone, but when you find all of them present it is pretty certain the patient has a stone in the bladder. Chronic prostatitis and cystitis are the diseases most likely to be mistaken for stone in the bladder.

In searching for a stone there are two things of the utmost importance, namely, a short-curved sound, and chloroform. I mean by a short-curved sound, one with the curved part not more than an inch and a half (eighteen and one-half millimetres) long—the curved part of an ordinary sound is about three inches (thirty-seven and one-half millimetres) long. The first thing then to be done is to put the patient fully under the influence of chloroform, so as to completely relax the bladder. Without the anæsthetic the instrument causes so much spasmodic contraction of the bladder that the stone is likely to be held in some part or fold of the bladder quite out of the way of the sound, thus entirely escaping detection.

In regard to the sound, Sir Henry Thompson says: "A sound with a long curve will lose more stones than it will find." At all events a sound with a short curve is the proper instrument to use. A small, or even ordinary sized stone is likely to lie down behind the prostate, where a common sound will reach entirely over and beyond it, while an instrument with a curve not more than an inch and a half (eighteen and one-half millimetres) long, and pretty abrupt, will touch it without any trouble.

To illustrate: In case No. 2, the patient had been examined by several doctors before he left Minnesota, but they were unable to find the stone, notwithstanding they were confident he had one. I learned from the

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parents of the boy that no anæsthetic was used, and I have no doubt a common sound was used. With the patient under the influence of chloroform, and a proper instrument, the stone was easily found. In case No. 3 the patient had been examined once or twice without chloroform, but to no purpose. So in case No. 4. In this case I experimented a little by trying to find the stone with a common instrument, without chloroform. I passed the instrument into the bladder but did not feel the stone, notwithstanding it weighed three ounces (85.05 grammes). It is true I did not try very much to find the stone, because of the great suffering it caused the patient; still, the experiment served to show how important the chloroform is.

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ARTICLE XX.

FISTULA IN ANO.

BY C. LINDE, M. D., OF OSHKOSH.

For all the writings on this disease, it seems to us that the operations or modes of treatment proposed by the most able surgeons are far from perfect or uniform. Some recommend unsparing use of the knife, others use it with great moderation, and some discard its use altogether. We have had in our practice a great many cases of fistula in ano, and some of them of the most formidable kind; and, so far, we have had perfect success. But we think that few surgical diseases require more close attention in the after-treatment on the part of the surgeon, and patience on the part of the patient, in order that a perfect cure may be effected. We also use the utmost care in preparing the patient for the operation, and for few cases we charge higher in proportion to the operative danger than for this.

The causation of fistula in ano is local and general. The system is more or less affected; but local irritation, like constipation, hemorrhoids, hurts to the parts, abscesses, carbuncles, etc., in the neighborhood of the anus, are the most common causes. All the cases that have come under our observation of this disease, have had their origin in abscesses in close vicinity of the anus, and many a fistula we think we have prevented by the timely opening of such abscesses. The abscess, after a free opening, is to be treated like any other abscess, though bearing in mind that the matter must have free vent, and that it is necessary to syringe out the cavity once or twice a day with a solution of carbolic acid in water, until it heals from the bottom. But the mischief is often done when the abscess is opened even early, when you will find that an ulcer has opened into the rectum; then you have to do with a true fistula in ano, and must treat it accordingly. A rather sure sign that the intestine is perforated is, that when the abscess is opened, instead of common pus, a fetid and ichorous discharge follows the knife. In some few cases we might now cut the sphincter and finish the operation, though as a general

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rule we would defer it for a time, as there is a possibility of a cure without doing so. If an incomplete external fistula exists, which Sir Benjamin Brodie denies, we would divide the sphincter to give the parts rest.

In most cases of long standing we are apt to have considerable constitutional disturbance, and the most common is pulmonary trouble. Here we must be careful not to operate before the patient, by proper internal treatment, is partly restored to a proper condition for the operation, though, if the pulmonary trouble be not excessive, as a patient in the last stage of consumption, we operate; and as far as our experience goes, the health has been restored after the cure of the fistula.

The preparatory treatment that we use before operating, besides the constitutional, is principally by injections of a watery solution of carbolic acid. We find that they destroy the atheromatous collections in the sinuses, and we think that the healing process goes on easier after their use, though we are not certain that the walls of the sinuses may not grow more hardened and cartilaginous; but this we overcome by the after-treatment, when the fistula is laid open.

Our way of operating is somewhat different from the rules generally laid down. We prefer that the patient should stand up in a bent position over the edge of the bed, his chest and abdomen well supported by pillows; and also, if possible, without an anæsthetic, as, though the pain is great for the moment, the operation is quickly done. Some persons will not be operated on without an anæsthetic. These we operate upon lying on their side with the nates well over the edge of the bed. We hardly know of an operation that a patient dreads so much as this. After the patient is ready, we introduce a director through the principal sinus, through the ulcer above the sphincter, and bring its groove out of the anus; then, with a probe-pointed, curved bistoury, or, if the tissues to be cut are too thick, with a long, straight knife, we finish the operation with one sweep. If other sinuses leading to pouches containing matter exist, we now lay them open. This is our way of operating. But now comes the worst part, the after-treatment. The bleeding stopped, which we have not had, even in very severe cases, to an alarming degree, we introduce a rather large plug, thoroughly saturated with carbolic cerate, in the cut sinus, and also one in the anus, give an opiate, and let the patient rest in bed.

The patient is then every day attended, his bowels regulated, his general system strengthened, and his diet,—mostly fluid,—nourishing. The plugs in the rectum and sinus are removed and renewed, and the parts carefully cleaned with injections of carbolic acid and water. In this way we keep on day after day, gradually decreasing the size of the plugs as the granulations spring up from the bottom of the wound, and if false

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granulations appear, we keep them down with nitrate of silver or sulphate of copper until an even and firm eschar has formed and the cure is complete, let it last six weeks, or a year.

We will now bring before you cases that we think are in point to the remarks we have made.

CASE 1. D. B. When the patient presented himself he had a fistula, after an abscess, that opened by itself, for over one year; he had a bad cough and copious expectoration. I proposed operation, but only after he had consulted several surgeons in Chicago would he consent thereto. On examination under chloroform the internal ulcer was found rather higher up in the rectum than usually is the case. I operated for the last time by introducing the probe-pointed curved knife through the sinus and ulcer on my finger in the rectum, and finished the cut by withdrawing knife and finger together. For dressing I used lint moistened in a solution of hypermanganate of potassa, as I then did not know the use of carbolic acid. On the sixth day I observed, in dressing the wound, that matter escaped in the cut from a sinus; this I laid open and found quite a large pouch filled with fetid matter. The patient after this progressed favorably, and after eight weeks was perfectly cured of lung trouble and fistula. This happened eighteen years ago, and no return of either trouble has occurred.

CASE 2. R. Was called to operate on this gentleman because he wished to have a considerable increase on his life insurance. He lived fifteen miles from Eau Claire, Wis. I found him in excellent health and of good habits The sinus opened about an inch and a half from the anus, and the inside ulcer was situated about one inch above the sphincter. I operated on the director as described above, the patient being under the influence of chloroform. In this case I had to leave the patient in an irregular's hands, and I think that he followed my directions for the after-cure strictly, as after half a year Mr. R. was so perfectly cured that he could get the increase on his life insurance he wished for.

CASE 3. Mr. H. M., a healthy young man, consulted me first for hemorrhoids. About a fortnight after he complained of a throbbing pain around the anus. An abscess formed. I opened it freely, and evacuated healthy-looking pus, but although I did my best to prevent an ulcer into the rectum, it did form. I then operated by cutting the sphincter on the director, without chloroform. In four weeks he was perfectly cured.

CASE 4. Mr. R., aged sixty, very much broken in health, presented himself to my son with an enormous anal abscess. My son opened it freely, and let out a large amount of intolerably fetid matter. Although un-

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doubtedly an ulcer existed into the rectum, he succeeded by proper constitutional treatment, and by keeping the wound open, and the cavity well syringed out with carbolic lotions every day, in effecting a cure without further cutting.

CASE 5. Mr. E., aged twenty-one, had an anal abscess. It was opened, but an ulcer had formed in the rectum. The patient fearing the operation, my son succeeded, after a long and tedious treatment, principally by stimulating the sinus with the biniodide of mercury, in effecting a permanent cure, without further cutting. This is the only case in our practice where we have succeeded in curing a true fistula without the use of the knife.

CASE 6. Mr. R. B., a scrofulous and cachectic young man aged twenty-five. His left lung affected in the lower lobe; cough and purulent expectoration. Was treated for his pulmonary troubles for some time, when he, last September, called on me to open a large abscess on the verge of the anus. As he lived in the country I could not give him the proper attendance, but had to leave him to such care as his relatives could give. A fistula formed and he came to town in January for operation. After a few days' preparatory treatment I operated, without chloroform, and found the rectum almost surrounded with pus. The ulcer was situated a few lines above the sphincter. For the first three weeks the case looked very unsatisfactory; the discharge was great, no appetite, distressing cough and night sweats. At last, under active constitutional treatment, he rallied; his appetite returned and the discharge lessened, but he broke out with furuncles, and had adenitis of the groin. One of the furuncles, situated on the tuberosity of the ischium, burrowed towards the cut, and the matter came out on the outside of the sphincter, at the edge of the anus. Iodine and carbolic injections seemed to conquer these new complications. He is now working, feels better than he has done for a long time, has gained flesh, his cough has left him, and he seems cured, except a small point in the cut, but as there is no discharge I do not treat him, but I watch him closely, and inspect him twice a week for fear of a relapse.

CASE 7. This I bring before you in the patient's own words; it was the worst one that I have seen cured:

Drs. C. & F. H. Linde:

GENTLEMEN: In answer to your request to give you points on my disease, allow me to make the following remarks.

In the spring of 1861 I was living in Oconto, Wis., and had a fistula break out. I consulted with physicians there, and none felt competent to do anything for me, but advised me to go to Milwaukee or Chicago. I went to Milwaukee, and was operated on by Dr. E. B. Wolcott. I was

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there four weeks, and got well. In 1870 a carbuncle formed on the opposite side from where the fistula had been, and it was three months before it was brought to a head. It kept discharging watery matter for about three months, leaving a cavity that would nearly take in a hen's egg. The physician that attended me used all his skill to make it heal, and it did heal, but not from the bottom. A fistula formed, with what I call a pocket, and after that another fistula broke out on the other side, where the first one had been. I suffered with them till the summer of 1876, when I found that something must be done. I was failing every day; my common weight was 170 pounds, and I had fallen away to 130; had a bad cough for three years, and was growing worse. I finally saw Dr. F. H. Linde, and was first examined by him, and afterwards by his father. They both told me that I could not stand an operation until I had taken medicine for my lungs and to strengthen me. This I did for three months, and was then operated on for the first time. They used a knife on the smallest fistula, and on what I call the pocket. They found the other fistula very deep-seated, and concluded to use a rubber ligature, which they tightened every day, and if the damned in hell suffer any more than I did with that, I will forever try the narrow path. It was in for four weeks, but would not cut its way out. They finally took it out, and used the knife. I was operated on four different times in two years, as they found pipes leading off from the pocket. The last operation was the worst of all, as it was very deep in the flesh. I gave up all hope of getting well many times, but having confidence in my physicians, I persevered, and I am now a well man; but if I ever should have another fistula, or should a friend, that I could influence, have one, then nothing shall be used but the knife for the operation. Yours, etc., N.

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ARTICLE XXI.

DIABETES MELLITUS.

BY JOHNSON SPERRY, M. D., DELAFIELD.

[NOTE.—This paper was prepared by Dr. Sperry for presentation to the State Medical Society at its present session. The death of its author having occurred before the meeting of the Society, the paper was presented to the Committee on Practice, who recommend its publication in the Transactions.—SECRETARY.]

Although this disease, because of its infrequency, may be of less interest to the physician than the majority of maladies that he is called upon to investigate and treat, yet, as it *does* occur now and then, and as it *may* happen to become the duty of any medical practitioner to endeavor to relieve, or, if possible, to cure this formidable and generally fatal disease, it may be of interest, perhaps also of some advantage to the members of this Society to listen to a concise history of a case that I believe to have been successfully treated, and to a short review of what is known of the pathology of this rather mysterious disease, and of the best method of managing it.

In this case I was my own patient, and have a personal experience of the malady to add to the ordinary observations of a physician; and had, in consequence, a better opportunity to acquire an intimate knowledge of all its phases and symptoms,—their variations produced by changes of weather, temperature, exercise, diet, etc., and the effect of medicines,—than is afforded by simply prescribing for the disease in another person.

About the middle of last August, happening into a physician's office in Waukesha, I noticed that he had a bottle of the copper-test for sugar. I told him I had the general symptoms of diabetes, and would like to have him ascertain if there was sugar in my urine. He kindly complied with my request. The application of the test revealed an abundance of sugar present. My condition at this time was about as follows: Within the last few months I had lost nearly thirty pounds in weight; I had a feeling of growing old rapidly; was easily fatigued; my legs were awkward, as if the muscular powers were weakened, and there was, at times, an aching, weary sensation in my loins; my mental faculties were dull,

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and it was difficult occasionally to give even ordinary attention to any subject. I also required more sleep than before, having now to rest in the middle of the day, contrary to my former habits. My sleep at night seemed to me to be heavy and continuous, although I was told that I groaned, jerked about and was very restless, and I dreamed incessantly; in the morning my mouth was exceedingly dry, but through the day, when kept shut, would contain more saliva than natural. I had a great appetite, with corresponding thirst; the bowels were very costive, and the fæces very dry and hard; the urine was, I judged, two or three times more than in health, yellow, perfectly clear, of a specific gravity from 1.030 to 1.040, and, as now demonstrated, contained sugar.

Having unexpectedly found and improved the opportunity of applying the chemical test, and the fact that I had diabetes being thus conclusively established, and knowing the unsatisfactory state of our knowledge of its pathology, and the uncertain and generally unsuccessful treatment hitherto employed, I sat down as coolly and deliberately as possible, and carefully considered the condition of all the organs and functions of my body, and endeavored to form some definite opinion as to which of them were disordered, and then to base my treatment upon such opinion, whether it agreed with or was opposed to medical authorities. I came to the conclusion that the liver was certainly disordered, but could form no definite opinion as to any other primary derangement.

I arrived at this conclusion by observing that a certain set or group of symptoms, which seemed as important as any I had, were those commonly seen in that torpid, inactive state of the liver that so nearly resembles jaundice; in fact, if the yellow skin and eyes were added, we should have that disease.

The depression of the muscular power; the hebetude of the mental faculties; the heavy, troubled sleep; dry mouth; costiveness; heavy yellow urine, and sometimes diuresis, are symptoms that I had often seen in connection with torpid liver, and entirely unconnected with any signs or suspicions of diabetes. I had always treated these symptoms successfully with mercurials, and I resolved to treat them in the same way in this case, and pay no attention to other symptoms.

Being naturally averse to much animal food, and being also often from home at meal times, it was both disagreeable and difficult to confine myself to a strict diabetic diet. I resolved, therefore, for a time any way, to live as usual, and see what blue-pills and kindred medicines would do for me.

I commenced with one five-grain pill every third night, followed the next morning with a common cathartic, and continued this for about two weeks, and then took instead podophyllin and blue-mass pills, three

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grains in each, of which two and one-half grains was blue mass, and took on the average one every other night down to the last week of April, a period of about five months.

These medicines fully accomplished all of the objects for which they were taken. They removed every one of the symptoms mentioned before as being caused by deranged liver, completely, and some time before they were discontinued. The diuresis ceased entirely within three weeks, and never returned. The sugar remained in the urine in about the same proportion for a long time after, but as there was but about one-third as much water passed, so there was but one-third as much sugar lost, and the body ceased to waste. I believe, also, that partly by their indirect and partly by their direct effect, they were the chief agents in effecting the improvement of the other symptoms.

Having read in the Druggists' Circular that the sulphide of calcium would cure the diabetes without change of diet, I procured some, *fresh*, and commenced taking it October 18, and continued until January 20, when, believing that it was of no benefit, I dropped it, having taken about 1¾ ounces. The record at this date states that I was feeling decidedly better, having improved in every respect but one since I began the treatment. The specific gravity of the urine at this date, before and three hours after breakfast, was 1.028, the test revealing the presence of sugar in both, but apparently in much less quantity. I now put myself upon the regular diet laid down for diabetics, and in less than thirty-six hours every trace of sugar had disappeared; but I found myself unable to adhere to this diet for more than three or four days, and compromised by taking for each meal about one-quarter farinaceous food. Upon this the sugar to a slight extent returned, but averaged a specific gravity of only 1.022, with slight traces of sugar; but whenever I indulged in a little more vegetable food, the fact was immediately proclaimed by an increased amount of sugar. March 16 I first recorded the fact that the first urine in the morning was only 1.022, and contained not the slightest trace of sugar. My recollection is that I had noticed this some time before, but had neglected to record it. At any rate, in many examinations of the morning urine made since that date, I have never detected a particle of evidence of the presence of sugar.

At this time, May 1, I am feeling well, and every organ seems to be discharging its functions in a normal and healthy manner, with this exception, that if I much exceed one-quarter in quantity of any food containing starch, at any meal, I can detect a trace of sugar in the urine within three hours after, but by confining myself to about that proportion of farinaceous food, which is sufficient to satisfy the cravings of appetite, no sugar appeared.

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Diabetes occurs, evidently, much more frequently in England than in this country, and in consequence we find many articles in their medical magazines in which its symptoms and treatment are discussed. From such of these articles as I have read, their authors' opinions seem to be that those cases of diabetes in which sugar is found in the morning urine are much more serious and fatal than those in which the sugar is found only after eating. They state that in the first class of cases the disease affects all of the digestive organs, and that they rarely or never recover, while of the other class of cases many get well. If this opinion of the English writers be correct, and I know of no reason or fact to the contrary, then I claim that my treatment in this case has converted already a serious and generally fatal malady into a relatively trivial and safe one, and so great an improvement has been effected as to apparently assure an entire and complete recovery.

Although glucose in the urine is a striking and prominent symptom in diabetes, and the result of so serious a disease of the digestive organs and assimilative functions as to frequently terminate in death, it is nevertheless a physiological product. So necessary and so important is this principle of food to the nutrition and calorification of the animal body, that nature has not only provided large quantities of the substances from which it is derived, in all alimentary materials, but has also provided within the body elaborate organs and secretions, manifestly for the express purpose of producing it. How is it that this physiological action and natural product is changed into a pathological act and a diseased product? All of the starch of the food that is consumed is, in a condition of health, converted in the small intestines into glucose by the pancreatic and intestinal juices, and is then absorbed into the blood, to be used for its predestined purposes. Modern physiologists have discovered and established the fact that the liver is endowed by nature with the singular power, which it exercises continually, of creating glucose out of the nitrogenized principles of our food, which is immediately taken into the blood and is probably disposed of in the same way as that from the intestines. Starch can easily be changed into glucose out of the body by chemical processes, but there is no way of getting glucose out of animal food that I know of, except by the action of the liver of carnivorous and omnivorous animals. From these two sources, in health, all of the grape-sugar used in the body is derived.

It has been ascertained by experiment that in the disease under consideration the stomach has acquired the power, that it does not possess in health, of creating glucose out of the nitrogenized principles of food. I believe that in this disease the absorbents of the intestines abstract a larger quantity of glucose from the same amount of material exposed to

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their action than in health, thus constituting another source of glucose. From these four sources all of the glucose found in the body, either in health or disease, is derived.

Two theories have been advocated in explanation of the presence of sugar in the urine in diabetes, one of which attributes it to an excessive production, and the other explains the fact by averring that the metamorphose of the sugar in the blood, which it must undergo before it can be used in nutrition, is in some way prevented; this is sometimes called consumption of the sugar. I believe that both of these theories are true. That on the one hand there is excessive production and on the other diminished consumption, and, as a consequence, there is a surplus that has to be eliminated from the system by the kidneys. As before stated, it has been proven that the stomach in diabetes creates glucose out of nitrogenized materials, and to this extent, therefore, it is certain that more sugar is produced in this disease than in health.

I believe it has not been ascertained by experiment that more glucose is produced in diabetes, out of the same quantity of amylaceous food than in health, in the small intestines, but an attentive consideration of all the circumstances and phenomena of the disease convince me that such is the case. I am also satisfied, from observation, that a greater amount of glucose is absorbed into the blood than is from the same quantity of material in a well person; the extreme dryness of the fæces, even when the bowels are moved once a day, shows there is active absorption, and I noticed on many occasions that I could, without harm, eat much more farinaceous food when there was looseness of the bowels, than in the opposite condition; this was because the contents of the intestines were not so long exposed to the action of the absorbents. It is not possible, I suppose, to prove that the liver produces more sugar in diabetes than in health, but it is a fair inference that it does so, and that in severe cases it contributes materially to the amount engendered in the system.

Glucose is the result of the first step in the process of digestion of the amylaceous portion of an aliment. It is absorbed into the blood and carried by it, through the right side of the heart, to the lungs without apparent change; beyond this point, in a sound person, it is not traceable. It has been, and still is, a question of great interest and importance to physiologists, what changes these substances undergo in the lungs and by what means they are accomplished. These same questions are of equal interest and importance to the pathologist in his endeavor to solve the problem of its appearance in the arterial blood of diabetes; if it were understood how and by what agencies the metamorphose of glucose in the lungs into other matter is effected, then, perhaps, the phenomena

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of diabetes could be readily explained. Knowing nothing about the matter, we must resort to conjecture if we attempt to solve the mystery. I make the suggestion (which has perhaps been made before) that the bile, or some of its constituent principles, are the agents in effecting this change of glucose. Flint says, that although it is not known what particular office the bile exercises in digestion and assimilation, yet it is proved by experiment that it is absolutely necessary in these processes. Having ligated the common bile-duct in a dog, so as to prevent all access of bile into the intestines, the animal lived several days, and ate heartily, and apparently digested his food well; nevertheless, it died of slow starvation. If the influence of the bile was exerted in the intestine, it could be perceived, but not being perceptible there, it is entirely probable that it is exercised in the blood. He has also shown that the bile is not wholly an excrementitious product, but that the biliary salts, at any rate, are absorbed with the chyle, and undoubtedly play an important part in the vital changes it undergoes to fit it for assimilation.

From the description of the symptoms of diabetes in text-books, and from my own case, there seems to be, as a general condition, a deficient secretion of bile. The proved necessity of this excretion in digestion; the fact that a portion of it is re-absorbed for some purpose, together with the deficiency of it in glucosuria, makes it highly probable that the failure in the transformation of glucose in the lungs is caused by the absence of a sufficient quantity of bile, or of some defect in its constitution. As the authorities say, there seem to be two indications for treatment: 1st, to reduce the amount of sugar produced; 2d, to change disordered acts or functions into healthy ones. In the milder grades of the disease, we can accomplish the first indication very effectually by excluding from the diet, as much as possible, the amylaceous element of food. In these cases the glucose is principally derived from this element, and if we reject this from the aliment, no sugar will appear in the urine. In effecting this we do not cure the disease, but experience shows that we have gained an important point, and have made a great advance towards the accomplishment of a cure. In graver or more advanced stages of the disease, the stomach, as before stated, converts more or less of the nitrogenized portions of the food into glucose, as the liver does in health, and to a greater extent, probably, in this disease. Of course, excluding starch from food will not prevent this, but nevertheless it is found beneficial to restrict the diet in all cases.

I do not believe there is any known medicine that acts directly in preventing the excessive production of sugar in the system, or in facilitating its subsequent changes. Although the sulphide of calcium was said to do this, it proved a dead failure in my case, after a thorough trial.

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Undoubtedly, in this disease, as in all others, different cases will require different treatment, while in some, as in the instance under consideration, the liver seems to be the organ principally disordered. In other examples perhaps some other organ or function may be more prominently deranged, necessitating other medication. But in all these cases in which there is manifestly present a torpid liver with its various consequences, I believe the administration of cholagogues, of which the combination of podophyllin and blue-mass is the best, is the most efficacious treatment, and most likely to succeed in curing the disease. This medicine acts directly in restoring the liver to a normal condition, and indirectly in restraining the conversion of starch into glucose, and in assisting in the consumption of it in the lungs. By increasing the flow of bile it aids healthy digestion; by keeping the bowels loose it prevents excessive absorption; and by its action upon the liver it tends to restore the natural balance of the two functions of this organ. If by the influence of the disease the sugar-producing function of the liver is increased, its production of bile is naturally diminished. If we stimulate, by medicine, the liver to an increased production of bile, we correspondingly diminish the production of sugar.

I believe, also, that mercury exerts a beneficial influence in this disease by its alterative properties; that is, it acts in an unknown way upon disordered vital actions that are also unknown, in restoring them to a normal condition.

I offer these suggestions for the treatment of many cases of diabetes, sustained as they are by the observation of their effects in only one case, for what the members of this Society may deem them worth. Confident that this mode of treatment has been of the greatest advantage in my case, I believe it will be found to be so in many others.

The presence of sugar in the urine, in diabetes, is a prominent and constant symptom of the disease. It never exists in the urinary secretion in a state of health, nor in any other disease, except as a transient and comparatively unimportant condition. At the time, and for a long time subsequent to its discovery in the urine, it was believed to be the essence of the malady; the cause of all its various symptoms and results. Although observation and experiments have long since shown the fallacy of that opinion, and demonstrated that sugar in the urine is only a diseased product of derangements of the vital action not even now clearly understood and appreciated, yet its formation in the body and excretion by the kidneys is so intimately associated with all of the phenomena of the disease, both as the earliest and most striking product or result of the disorder, and in its turn the cause of other morbid changes; and as an inquiry into the pathology of diabetes necessarily

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includes an investigation of the mode of production and the natural disposition of glucose in the human system, we may practically consider the original idea to be correct.

Physiologists divide the elements of our food into two classes, called nitrogenized and non-nitrogenized principles, and grape sugar is produced in the body, physiologically, from both of these classes, but by widely different methods. All of the starch of the food is converted into glucose, in the intestines, by the pancreatic and intestinal juices, as the first step in its digestion, and is absorbed into the blood, without further apparent change, and can be found as such in the blood until it reaches the lungs, but is not further traceable in the healthy subject.

It has recently been ascertained that the liver, in carnivorous and omnivorous animals, possesses the power, which it continually exercises during life, and for some time after death, of producing glucose from the class of nitrogenized principles of food, which takes the same course and is disposed of in the same manner as that formed from starch.

The formation of sugar in the body from alimentary substances is, therefore, a natural process, and necessary in the great vital operations of converting food into the living, active animal, and of sustaining and perfecting the functions of assimilation, nutrition and calorification.

The question to be solved, in considering the relation of the presence of grape sugar in the urine to diabetes, is whether it be a new morbid process or only an exaggeration of a physiological function.

Two theories have prevailed to account for the large amount of glucose excreted by the kidneys in diabetes. The earliest was that the sugar excreted was the consequence of simply an exaggerated physiological process.

This theory is true only to a certain extent, and cannot explain the great quantity passing out of the system in this way.

If, as is asserted by physiologists, all of the amylaceous portion of the food is converted into glucose, as the first step in its digestion, of course there cannot be an increased production from this source, and as starch is the only element of non-nitrogenized food from which glucose can be formed, no increased amount can be produced, either in disease or health, from this whole class of alimentary principles.

The liver creates glucose in a physiological manner, from the nitrogenized class of food-principle. As it is not known what particular elements of this class, or whether all of them, are used for this purpose, nor what proportion of them is converted naturally into sugar, it cannot be determined, either by experiment or logic, whether there can be an increased production by an exaggerated physiological process. But as it is well known that all secreting organs whose functions are clearly under-

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stood can and do largely increase their secretions, from various influences, in a perfectly natural manner, it may be fairly inferred that the glycogenic function of the liver can be stimulated to an increased production, and thus contribute, in accordance with the theory, to the amount present in diabetes.

It has been demonstrated that a part, at least, of the superabundance of sugar in diabetes is formed by a new pathological process. The stomach, that does not in health possess the power of creating glucose from any of the alimentary principles, becomes capable, in diabetes, of producing it abundantly, like the liver, from the nitrogenized elements of food. It is quite probable, although not proven, that the intestines have acquired this diseased action, and, in unison with the stomach, materially increases its production of sugar by creating it from other material than starch.

I infer from some observations in my own case, that there is a greater amount of sugar absorbed in the intestines from the same quantity of material, than in health. That there is more thorough absorption, is proven by the great dryness and less proportional amount of fæces discharged, and I noticed that I could eat more starchy food without detriment when the bowels were loose, than when they were costive, because, I suppose, the contents of the bowels were not so long exposed to the action of the absorbents. All the known facts of the origin of grape sugar in the system, and its connection with diabetes as a prominent symptom, together with the rational and reasonable inferences therefrom, justify the opinion that there is in this disease a much greater amount of sugar conveyed into the blood than in health, and that this excess is derived from three sources: 1st, an exaggerated physiological action of the liver; 2d, excessive intestinal absorption; 3d, chiefly from a new pathological process, established in the stomach certainly, and probably in the intestines, by which large quantities of sugar are manufactured from ingredients of the food other than the amylaceous; and that the extent and severity of this process determines the gravity and danger of the disease.

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ARTICLE XXII.

OBITUARY SKETCH OF JOHNSON SPERRY, M. D., OF DELAFIELD.

BY JOHN A. RICE, M. D., OF MERTON.

The subject of this sketch, Dr. Johnson Sperry, was born Sept. 22d, 1822, in Manchester, Vermont, and died on the 14th day of January, 1879, in Delafield, Wis., of malarial fever with acute congestion of the lungs, aged fifty-seven years.

The doctor removed while very young to New York, afterwards to Burton, Ohio, where he studied medicine with Dr. Goodwin of that place, and who said he was the best student of medicine he ever had. In the year 1847 he came to Wisconsin, and commenced the practice of medicine in partnership with the late Dr. Castleman of Delafield, Waukesha county, and where he continued to reside and practice medicine until his death. He was married to Miss Permelia D. Hawks in 1851, by whom he had two sons and two daughters, all of whom are now living. He became a member of the State Medical Society in 1871, in which he always took a deep interest, being a constant attendant upon the annual meetings.

It has been the privilege of the writer of this sketch to be intimately acquainted with the Doctor for many years, often meeting him in consultation and socially, and he desires now to say that he was an ardent and honest lover of his profession, a close student, and that he practiced medicine for the good of his fellow-creatures. Always modest and unassuming, exceedingly cautious and careful in his diagnosis, with a rare judgment and sound, practical common-sense, he was one of the most successful practitioners in the county, and he had the confidence of his fellow-citizens in an eminent degree. The community in which he lived has lost an excellent physician and an *honest man.*

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ARTICLE XXIII.

OBITUARY SKETCH OF MARVIN WATERHOUSE, M. D., OF PORTAGE.

BY WM. MEACHER, M. D., OF PORTAGE.

Dr. Marvin Waterhouse was born of American parents, on the 19th day of September, 1827, in the town of Alden, in the county of Erie, and State of New York. When he was eleven years of age the family removed to Lockport, N. Y., where they remained about a year, and then removed to Pittsfield, Warren county, Pa. The father died at Pittsfield, after a year's sickness, when the son Marvin was about fourteen years old. At this time an older son was living at Darien, Wis., and the next spring, the widow, with Marvin as driver of a "prairie schooner," came to Darien. Here, and at Delavan, Marvin labored at farm work for several years.

In December, 1850, he removed to Packwaukee, Wis., where he took up a farm, and on the first day of January, 1852, he was married to Miss Maria A. Older, who still survives him. Their union was not blessed with children.

In October, 1853, while hauling timber for the purpose of building a barn, he had the misfortune to get his left ankle badly broken. By this injury he was confined to the house until April, 1854, and from that time he was on crutches a year. During this confinement to the house he commenced the study of medicine, which he diligently pursued until 1856. He then commenced practice at Oxford, Wis. He was but a short time in acquiring skill in his practice, and the confidence of the people of Oxford and vicinity. Here he had the misfortune to break the same leg again, which was then a long time in getting well; in fact, it never did get well. However, in 1860, he was able to attend lectures at Rush Medical College. He subsequently received his degree from Rush, in 1864. In the same year he was commissioned first assistant

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surgeon in the First Regiment of Heavy Artillery, Wisconsin Volunteers. In this position he won the esteem and confidence of all who knew him. He remained in the army until the close of the war, when he removed to Portage, where he remained until his death.

Soon after taking up his residence in Portage, misfortune still pursuing the unfortunate limb, he was thrown from a cutter, and fractured the neck of the femur within the capsular ligament on the lame side. This, of course, never united, and always served to increase his lameness as well as discomfort.

On the third of July, 1867, at the reorganization of the Wisconsin State Medical Society, he became a member, and was elected as vice-president of the Society in 1871. In 1873 he was chosen president. He was elected delegate to the American Medical Association for the years 1870, 1871, 1873 and 1875. He contributed many valuable papers to the State Medical Society.

For several years the Doctor had suffered with an ugly ulcer on the heel of the injured limb. It resisted all treatment and obstinately grew larger and more painful, until, in the fore part of the winter of 1878, he decided to suffer amputation of the crippled leg, which was performed by Dr. Marks and Dr. Meacher, assisted by a number of other physicians, on the tenth of January, 1878. The stump healed kindly and rapidly, and in three weeks he was out. A few weeks later he was about the streets on an artificial limb, feeling better than he had for years. But this was not to last long. About the first of May a small purplish-red tumor, about half an inch in diameter, appeared on the end of the stump, though not in the cicatrix. This little tumor slowly but steadily increased in size. In the course of a few weeks, the Doctor desired to have it lanced. He was advised by his medical friends to let it alone, but he insisted upon having it laid open. From that time on it continued to increase in size, until the whole end of the stump became involved. Soon after the tumor was opened a specimen from it was examined under the microscope, and showed unmistakable evidence of malignancy. In a week or two more, the lymphatic glands in the groin became affected. From that time on, the disease, especially at the groin, made rapid progress, until it terminated his life, on the nineteenth of October, 1878.

The funeral ceremonies were conducted by the Order of Odd Fellows, of which Order he had long been a very prominent member.

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Dr. Waterhouse commenced the study of medicine in obscurity and adversity, but by his industry and integrity, in spite of obstacles that would have disheartened most of us, he won a high place in his profession.

He was a true physician; ever ready and willing, he never shrunk from his duty, nor flinched in its performance.

Can any higher, nobler eulogy, be pronounced on him, than to say, "*He was a true physician*"?

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ARTICLE XXIV.

OBITUARY SKETCH OF A. W. LUECK, M. D., OF MAYVILLE.

BY E. L. GRIFFIN, M. D., OF FOND DU LAC.

Dr. A. W. Lueck was born at Schœnflics, Prussia, June 2d, 1838. He came to the United States with his father in 1846. Having laid the foundation of his studies in a good academic education, he graduated at Rush Medical College, January, 1862. He at once established himself in practice at Mayville, Wis., where he continued his work successfully until his death, which occurred suddenly on the 11th of December, 1878, from pulmonary œdema, a complication of acute inflammation of the kidneys.

He was a member of the Wisconsin State Medical Society and of the Rock River Medical Society, and served the latter for several years as its faithful secretary. He contributed several valuable papers upon medical subjects. He left a wife, three promising young sons, and an aged father to mourn his early death.

Dr. Lueck was a pattern of industry and fidelity. He had a refined taste, and was diligent in the use of his opportunities to acquire knowledge and fit himself for the highest success in his profession. He had marked individuality and independence of mind, and chose his own methods of reasoning and analysis in his investigations of medical subjects. Entertaining proper deference for the opinions of others, he was satisfied only as by his own investigations, reasonings and analysis he had reached established conclusions. Hence he was always in the advance, and grappling with unsettled questions. Inheriting a weak constitution, and being crippled in body by a severe accident in early life, he entered upon his life-work as a physician, and prosecuted it under great difficulties, but with such energy of purpose, such constancy and industry as to *command* success where those of stronger bodies, but

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of less mental force, might have failed. He had a clear mind, and appropriated the best medical thought of the day. He was unassuming and unobtrusive, but met every duty with an ability and fidelity which commanded the respect and commendation of his associates.

As a man he was pure in character and unselfish in his devotion to duty. He loved his profession, for it gave an opportunity for the exercise of what was noble and unselfish in his nature.

His enthusiasm was fed by his love of knowledge and the real pleasure he received in ministering to others. He was not only upright and true, but as full of tender sympathy as a woman. A man is to be judged not by what he *does* but by what he *faithfully strives to do*. It is the *use* we make of the powers entrusted to us which constitutes our just claim to respect. Human life must be allied to goodness and wisdom, and be embodied in upright character to command our highest admiration.

Measured by these standards Dr. Lueck was entitled to and held an honorable position in the community and among his professional brethren. He died young, but the memory of his many virtues will be warmly cherished by those who knew him best.

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ARTICLE XXV.

OBITUARY SKETCH OF F. V. BURROUGHS, M. D., OF MAUSTON.

BY G. W. JENKINS, M. D., OF KILBOURN CITY.

Francis Volney Burroughs, M. D., was born in Glasgow, Scott county, Ill., in December, 1840. When the rebellion broke out he was living with his family at River Falls, in this State. Anxious to serve his country, he enlisted in a Michigan regiment, which soon disbanded, when he immediately re-enlisted in the Thirtieth Wisconsin Volunteers. With this regiment he served his country three years, and was honorably discharged. Soon after this he commenced the study of medicine and surgery with Dr. Farr of Mauston, with a determination to leave nothing undone, so far as in him lay, towards the successful prosecution of his studies in his chosen profession. He attended the lectures of the Bellevue Medical College, and graduated with honor at that institution in the spring of 1869.

After receiving his degree, he commenced the practice of his profession at Mauston, being associated with his brother for a number of years, and continued its active duties until he died, June 24, 1878.

He was twice married, his last wife being Alta, daughter of J. G. Parks, Esq., of Mauston, who survives to mourn his loss.

In the spring of 1877 he was taken with great pain in his stomach, which became so irritable that it rejected everything that was put into it. It was during this time that the writer was called with his brother to relieve his distress. We expected, so greatly was he reduced from his inability to receive nourishment, that he would die of inanition; but by the constant use of nutritious enemas, life was maintained until his stomach could take food, and he recovered so as to be able to commence his labors again, which

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he continued to do until the following spring, when his old enemy returned with greater violence, and soon prostrated him to an extent from which he never recovered.

The writer had frequent opportunities of meeting Dr. Burroughs, and always found him a close student. All with whom he came in contact were impressed with his indomitable energy, iron will, devotion to truth, and hatred of shams in every form. To all he was a friend, ever as ready to give his counsel and time to the poor as the rich. None knew him but to honor and respect him, and deeply is his loss felt by the community in which he labored so arduously for the relief of suffering humanity. Thus it is. Each year finds some of our number gone to that undiscovered country from which none ever return-

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ARTICLE XXVI.

OBITUARY SKETCH OF JAMES CADELL DAVIS, M. D., OF FORT ATKINSON.

BY G. C. STOCKMAN, M. D., OF FORT ATKINSON.

The subject of this obituary was born in the town of Rich Hill, Muskingum county, Ohio, Nov. 12, 1821, and died at his residence in Fort Atkinson, Wis., April 30, 1879. His boyhood days were passed on a farm. When he was seventeen years of age he, with his parents, moved to Fort Madison, Iowa, where he afterwards studied medicine with Dr. Whinnery. He was a graduate of Rush Medical College, Chicago, Ill., and at twenty-eight years of age he began the practice of his chosen profession, since which time he has practiced in Wabasha, Minn., Pepin, Wis., and Durand, Wis., before coming to our city, which was in September, 1865. He joined the State Medical Society in 1869, and since which time he has taken a great interest in the Society, and has read quite a number of papers before it. Dr. Davis was a scholar in his profession. He was thoroughly conversant on all the branches pertaining to it, and kept well posted in all new remedies and modes of treating disease, and when not engaged in active practice, his time was spent in study. His knowledge was very exact, not loose and inaccurate. He was always anxious to study, and was anxious to do what he could to advance his profession. He was a man of marked traits of character and very strong will-power, which were combined with a loving and generous heart. His faithfulness to his patients always won their confidence and friendship. He was a man of great public spirit, and entered with all his power into any new enterprise that seemed to him would be of value to the community in which he lived. In surgery, perhaps Dr. Davis had not his superior in Wisconsin. His knowledge of anatomy was so great that the operation was crystalized in his mind before the first movement was made. His death leaves a wound in many a heart which will not soon be healed, and a vacancy in this city which will never be forgotten. A wife and seven children, three sons and four daughters, are left to mourn his loss. In Dr. Davis' death, the community has lost a good man, his family a kind husband and loving father.

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ARTICLE XXVII.

CONSTITUTION AND BY-LAWS OF THE WISCONSIN STATE MEDICAL SOCIETY.

PREAMBLE.

We, the undersigned, physicians and surgeons of the State of Wisconsin, in order to cultivate harmony and kind feeling among the members of the medical profession, to promote the advancement of the medical and collateral sciences, and to assist us in acquiring a knowledge of the same, and in keeping pace with the progress of medical science; to help us appreciate the magnitude and nature of the mutual duties and responsibilities existing between the medical profession and the community, and to protect ourselves and society against the impositions of medical pretenders, do hereby agree to associate ourselves together, and be governed by the following

CONSTITUTION.

ARTICLE I. This organization shall be known by the name of the State Medical Society of Wisconsin.

ART. II. The Society shall meet annually, on the first Tuesday of May or June, as may be directed by the Secretary, at 8.00 o'clock, P. M., in the place designated by the Society at its previous meeting.

ART. III. Seven members of this Society shall constitute a quorum for the transaction of business, but any number may adjourn from time to time.

ART. IV. The officers of this Society shall be a President, a First and Second Vice-President, a Secretary, a Treasurer, and three Censors, who shall be elected at the annual meeting, and hold their offices respectively for the term of one year (except the Censors), and until their successors in office are duly elected and qualified. The Censors shall be elected for three years, one to be elected annually, and at the first election following

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the adoption of this amendment, one shall be elected for the term of one year, one for two years, and one for three years.

ART. V. The President shall preside at the meetings, preserve order and decorum in debate, give a casting vote when necessary, and perform all the other duties that custom and parliamentary usage may require, and deliver an address at the close of his term of office. He may call *special meetings* at any time, if he deem it necessary; and it shall be his duty to call such meetings whenever requested in writing to do so by five members of this Society.

ART. VI. In case of the absence or inability of the President to discharge his duties, the latter shall devolve upon the Vice-Presidents, and in the order of their election.

ART. VII. The Secretary shall record the minutes and authenticate the proceedings, give due notice of all meetings, conduct the correspondence of the Society, preserve all records and papers belonging to the Society, and at the close of his term of office shall lay before the Society a full report of his official correspondence and doings.

ART. VIII. The Treasurer shall collect and receive all moneys due or presented to the Society, and shall disburse the same under its direction. He shall keep a book in which he shall enter the debits and credits of every member, the amounts received and distributed by him as Treasurer; and shall, at the expiration of his term of office, and at any other time, when requested to do so by the Society, report the condition of the Treasury. He shall also give good and sufficient bond to the Secretary, in behalf of the Society, for the faithful discharge of his trust.

ART. IX. The Censors shall constitute a committee for the examination of applicants for membership; but shall entertain no petition for membership unless the applicant shall appear in person and present the certificate of two respectable physicians living in the immediate vicinity of said applicant, as to moral and professional character. They shall also examine candidates for the study of medicine, as to their educational qualifications; these qualifications to be at least a good knowledge of English and of mathematics; and no member of this Society shall receive a student into his office until such student shall present a certificate from the Board, stating that he has the necessary preliminary education.

ART. X. Any regular physician making application for membership in accordance with the provisions of Art. IX, and who shall present a diploma from a regularly organized school of medicine of good repute; or a certificate or diploma of membership in a county or district medical

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society, accompanied by a certificate of six years' practice; or who shall submit to such an examination as the Censors may impose, shall, on their recommendation, and on receiving a vote of two-thirds of the members present at any annual meeting, be entitled to membership by signing the Constitution and paying five dollars ($5.00) to the Treasurer of the Society.

ART. XI. This Society may elect honorary members at any annual meeting, by a vote of three-fourths of the members present.

ART. XII. All regularly organized County Medical Societies in this State may elect delegates to this Society in the ratio for one for every five of its members, and such delegates shall, on payment of the annual dues, be entitled to all the privileges of membership in this Society during the time for which they are elected.

ART. XIII. This Society shall have power to obtain funds by an equal assessment of its members, by voluntary contributions, and by the sale and disposal of publications and of works for publication; but no assessment shall be made for more than three dollars upon each member in any one year, nor except at annual meetings, or at meetings called for that express purpose; in the latter case the object of the meeting shall be set forth and published in the call.

ART. XIV. This Society may censure, reprimand, or expel any member for improper conduct, as may be prescribed by the By-Laws.

ART. XV. No amendment shall be made to this Constitution, unless the proposed amendment shall have been submitted in writing at some previous regular meeting of the Society, and for such action eight members shall be necessary for a quorum, and two-thirds of the members present must vote for the amendment. *Provided*, however, that by a unanimous vote of ten or more members present at any annual meeting, any article of this constitution may be amended or repealed, and articles added thereto, without such previous notice.

BY-LAWS.

RULES OF ORDER.

ART. I. In the discussion and disposition of all business coming before the Wisconsin State Medical Society, parliamentary rules of debate shall be observed, and Jefferson's Manual shall be the guide.

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ORDER OF BUSINESS.

ART. II. The order of business at the annual meetings of the Society shall be as follows:

1. The calling of the roll.
2. The reading of the minutes.
3. The admission of members.
4. The Secretary's and Treasurer's reports.
5. The reading of essays and reports from all Standing Committees.
6. The reading of essays and reports of cases.
7. Miscellaneous business.
8. Unfinished business.
9. The election of officers.
10. The appointing of Standing Committees.
11. The President's Address.
12. Adjournment.

FORCE OF THE CODE OF ETHICS.

ART. III. The Code of Ethics heretofore adopted by this Society from the American Medical Association, shall have the full force of any article of either the Constitution or the By-Laws.

DISCIPLINE OF MEMBERS.

ART. IV.— SEC. 1. Any member shall be liable to censure, suspension, or expulsion for wilful neglect of the rules and regulations of this Society, for any flagrant violation of our code of ethics, or for any gross or immoral conduct. A vote of two-thirds of the members present shall be requisite to censure, to suspend, or to expel.

SEC. 2. Should any charges be preferred against any member which might lead to his censure, suspension, or expulsion, such charges shall be preferred while the Society is in special executive session, and the Secretary shall immediately give the accused a written copy of the said charges, and state by whom preferred. The matter shall then lie over until the next annual meeting, when due action shall be taken thereon.

SEC. 3. Any member of this Society, who, from professional incompetency, or from any other sufficient reason not already mentioned, shall be deemed unworthy of the fellowship of this Society, may be deprived of his membership as provided in sections one (1) and two (2) of this article.

SEC. 4. Any member of this Society who shall absent himself from the meetings of the same for three successive years, without rendering to

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the Society a satisfactory excuse, shall lose membership in the same, but may renew his standing by repayment of the admission fee.

SEC. 5. Any member failing for a period of three years to pay to the Society the sum of three (3) dollars annual dues, shall also lose membership in the Society, unless such member shall have removed from the State, in which case he may remain an honorary member thereof during such absence. The annual dues of the Secretary are remitted.

SEC. 6. If any member of this Society, to whom has been assigned any duty, such as the preparation of a report, or the reading of an essay, or like service, shall fail to perform such a duty at the time assigned, he shall be relieved therefrom, but the duty assigned shall be due from him at the next meeting of the Society thereafter, and if he then fail to perform the service required of him without rendering a satisfactory excuse for such neglect, he shall lose his standing as a member of this Society.

STANDING COMMITTEES.

ART. V. The following named Standing Committees, each to be composed of three members, to be appointed by the President—except the Committee on Ethics and Publication, otherwise provided for—shall be organized at every annual meeting, for preparing, arranging and expediting business for each next ensuing year, and for carrying out the objects of the Society not otherwise provided for, namely, a Committee on Ethics, a Committee on Arrangements, a Committee on Practical Medicine, a Committee on Surgery, a Committee on Obstetrics, a Committee on Finance, and a Committee on Publication.

The Committee on Ethics shall be composed of nine members, who shall be nominated by the President, and elected by the Society. Three of the number shall serve for a term of three years, three for two years, and three for one year after the first election. Thereafter, three shall be elected annually for a term of three years. They shall consider all cases for discipline of members. All charges made shall be referred to them without discussion; all evidence shall be presented to them, and they shall report their conclusions to the Society.

The Committee on Arrangements shall provide suitable accommodations for the meetings, and for the members from abroad, and in general attend to the wants of the Profession while attending the meetings of the Society.

The Committee on Practical Medicine shall make an annual report, embodying the recent and most practical improvements, discoveries and advancements in the practice of medicine.

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The Committee on Surgery shall make an annual report on the subject of surgery, and give a summary of the recent improvements, discoveries and progress in this department of medicine.

The Committee on Obstetrics shall make an annual report on the subject of obstetrics and the diseases of women and children, giving a summary of the recent discoveries and improvements in this branch of medicine.

The Committee on Finance shall be the Executive Committee of this Society, to whom all accounts must be referred, and who shall make an annual report on the financial condition of the Society, and on all matters usually falling to the consideration of executive committees.

The Committee on Publication shall be composed of the Secretary, Treasurer and President, who shall have charge of all matters intended for the press, and superintend their publication.

The reports of all standing committees shall, on their reference to the Publication Committee, be published in the Transactions of the Society. All other, or voluntary reports or papers, shall be referred to the committee under which the report or paper would properly fall, and such committee shall decide upon the publication of papers so referred. The publication of any paper is not to be understood as necessarily an endorsement by the Society of the views contained therein.

MEMBERS TO REPORT CASES.

ART. VI. Every member of this Society who is neither appointed to read an essay, or to the chairmanship of a committee, shall give a complete detailed written history of one case of disease occurring under his own observation, comprising everything touching its etiology, pathology, symptomatology, nosology, diagnosis, prognosis, therapeutics and hygienics.

AMENDMENTS.

ART. VII. These By-laws may be altered, added to or repealed by a three-fourths vote at any annual meeting.

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ARTICLE XXVIII.

THE MEMBERSHIP OF THE WISCONSIN STATE MEDICAL SOCIETY.

Adams, H. D.....Union Grove
Allen, Hamilton.....Oconto
Anderson, W. A.....La Crosse
Andrews, Gordon.....Cobb
Armstrong, L. G.....Boscobel
Bading, John P.....Milwaukee
Barnes, H. L.....Ripon
Barnett, J. R.....Neenah
Barrows, L. J.....Janesville
Barry, John S...Prairie du Chien
Bartlett, E. W.....Milwaukee
Bartlett, J. K.....Milwaukee
Bell, Samuel.....Beloit
Bennett, D. O.....Waterloo
Binnie, John.....Poynette
Bird, H. R.....Mifflin
Bishop, S. S.....Fond du Lac
Blair, W. M.....Darlington
Bond, D. M....Johnstown Centre
Booth, Chas. E.....Elroy
Bordon, W. H.....Milton
Boughton, D. F.....Mendota
Bowers, S. S.....Fond du Lac
Bradshaw, H. N.....Monroe
Brenton, J. L.....Beloit
Brett, Ben C.....Green Bay
Bristol, E. L. M.....Milwaukee
Brown, James J.....Madison
Broughton, R.....Brodhead
Buchan, A. L.....Union Grove
Burrall, Geo. W.....Dodgeville
Burrington, S. O.....Columbus
Burroughs, F. V.*.....Mauston
Butler, Wm. C.....Janesville
Butterfield, H. L.....Waupun
Calkins, Geo. H.....Waupaca
Carley, D. W.....Boscobel
Catlin, Geo. E.....Geneva
Chase, H. A.....Viroqua
Clark, Almon.....Sheboygan
Clark, S. S.*....Menomonee Falls
Coakley, J. E....Milton Junction
Cody, James.....Watertown
Coolidge, S. C.....Middleton
Cowles, Charles.....Baraboo
Cowles, L. C.¶.....Baraboo
Curtis, J. Wilber...Decorah, Iowa
David, Joseph W.....Highland
Davies, D. C.....Columbus
Davies, John E.....Madison
Davis, J. C.*.....Fort Atkinson
Davis, M. M.....Baraboo
Day, F. H.....Wauwatosa
De Hart, I. N.¶.....Mendota

*Deceased. ¶Removed from State.

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Dodge, E. F.....Fond du Lac
Dodson, N. M.....Berlin
Dodson, B. F.....Berlin
Dorland, James.....Milwaukee
Dubois, Darwin.....Lake Mills
Earll, R. W.....Columbus
Eastman, Wm.....Mineral Point
Egan, Charles.....Highland
Ellis, Edwin.....Ashland
Evans, T. W.....Stoughton
Favill, John.....Madison
Fairman, Eli W.....Brodhead
Fischer, Francis.....Madison
Fisk, M. H.....Depere
Fox, G. H.....Oregon
Fox, Philip.....Madison
Fox, William.....Milwaukee
Fuller, S. L.¶.....Milwaukee
Gage, M. R.....Sparta
Galentine, Samuel.....Neenah
Gapen, Clark.....Mendota
Garry, John E.....Stockbridge
Gee, J. E.....Brandon
Gibbs, Jonathan.....Omro
Gleason, W. H.....Mazomanie
Goe, J. W.....Oshkosh
Godfrey, H. T.....Benton
Gorham, W. M.‡.....Milwaukee
Grættinger, Alois.....Milwaukee
Griffin, E. L.....Fond du Lac
Guernsey, A. H.....Amherst
Guinan, James.....New London
Hall, Samuel.....Reedsburg
Hall, Storrs.....Rosendale
Hall, J. C.....Monroe
Hamilton, I. P.....Darlington
Hasse, Herman E.....Milwaukee
Hausman, William.....Ashford
Hobbins, Joseph.....Madison
Hobbins, William.....Madison
Hoegh Knut.....La Crosse
Hopkins, J. F.....Oconomowoc
Horton, E. G.....Whitewater
Hunt, Geo. F.....West Bend
Hutchinson, Geo.....Durand
Irwin, E. H.....Lodi
Jenkins, G. W.....Kilbourn City
Johnson, H. B.....Beloit
Johnstone, John.....Neosho
Kendall, A. O.¶.....Middleton
Kempster, Walter.....Winnebago
Ladd, G. D.....Milwaukee
Lawrence, Amos.....Oshkosh
LaCount, D.....Chilton
Leavitt, Justin J.....Fennimore
Leonard, Wm. T.¶.....Wonewoc
Lewis, Frank L.....Arcadia
Linde, Christian.....Oshkosh
Linde, F. H.....Oshkosh
Lindsay, H. E.....Avoca
Loofbourow, Nathan A...Monroe
Loomis, E. E.....Janesville
Loop, T. E.....Eureka
Lueck, A. W.*.....Mayville
Luhmann F. S.....Two Rivers
Lynch, Daniel W.....Richfield
Mack, J. A.....Madison
MacNeill. J. E.....Mauston
Mann, H. E.....Marinette
Manly, Ira, Jr.....Markesan
Marden, F. A.....Milwaukee
Marks, Solon.....Milwaukee
Marston, S. L.....Campbellsport
Mason, Darius.....Milwaukee
Masterson, J. A.....Waterloo
Mayham, T. F.....Fond du Lac
McCall, William.....Omro
McGuire, Francis.....Jefferson
McNeel, J. H.....Fond du Lac
McKnight, Lewis.....Milwaukee

* Deceased. ‡ Honorary Member. ¶ Removed from State.

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Meachem, E. H. G.....Milwaukee
Meachem, J. G.....Racine
Meachem, J. G., Jr.....Racine
Meacher, Wm.....Portage
Miller, D. McL. ...Oconomowoc
Miller, Henry.....Lowell
Miller, Clark I.....Whitewater
Mitchell, John ‡.....Janesville
Monroe, Wm.....Monroe
Moore, D. W.....Waupun
Moore, J. R.....New London
Myers, Miles G.....Wautoma
Newel, G. E.....Waterford
Nichols, Theron¶.....Milwaukee
Norris, N. H.....Beloit
O'Brien, J. N.....Waupun
O'Reilly, John R.....Appleton
Orrick, J. H.*.....Stevens Point
Ottilie, Chas.....La Crosse
Page, J. L.....Racine
Palmer, Henry.....Janesville
Phillips, B. T...Menomonee, Mich
Pritchard, J. L.....Manitowoc
Raymond, D. A.‡....Fond du Lac
Reeve, J. T.....Appleton
Regan, J. N .....Oconomowoc
Reynolds, B. O .....Geneva
Reynolds, F. L.....Neosho
Reynolds, J. C.....Geneva
Rice, John A.....Merton
Riddell, S. S.....Chippewa Falls
Robbins, C. W.....Milwaukee
Rockwell, W. M.....Johnstown
Rogers, E. M.....Hartford
Rogers, Jirah.....Ripon
Rowley, A. A.....Middleton
Russell, Hugh.....Westfield
Russell, J. A.....Cedarburg
Russell, T. P.....Oshkosh
Schorse, William.....Milwaukee
Seiler, George.....Alma
Selden, O. G.¶.....Reedsburg
Senn, Nicholas.....Milwaukee
Shepard, J. L....Sheboygan Falls
Smith, C. M.....Evansville
Spalding, W. C .....Watertown
Sperry, Johnson*.....Delafield
Stair, U. P.....Black Earth
Stanard, F. D.....Martinville
Stansbury, Emory.....Appleton
Stark, Geo. A.....Milwaukee
Stark, Theodore F.¶...Milwaukee
Steele, Geo. M.....Oshkosh
St. John, J. W.....Janesville
Stoddard, C. L.....La Crosse
Strong, H. P.....Beloit
Teal, Cornelius.....Ironton
Thomas, W. M.....Darlington
Thompson, J. H.....Milwaukee
Thorndyke, Wm .....Milwaukee
Van Buskirk, Joseph ¶.....Elroy
Van Dusen, Harmon...Mineral Pt.
Van Dusen, W. H.....Montfort
Vittum, W. H.....Baraboo
Vivian, J. H.....Mineral Point
Walbridge, J. S.....Weyauwega
Ward, A. J.....Madison
Waterhouse, M.*.....Portage City
Wenzel, H. P.....Lomira
Wheeler, A. L.....Spring Green
Whinery, M.....Rice Lake
Whiting, J. B.....Janesville
Whyte, W. F.....Watertown
Wigginton, R. M.....Watertown
Wight, O. W.....Milwaukee
Wilber, Geo. D.....Mineral Point
Wiley, Wm.....Fond du Lac
Williams, J. Ll.....Cambria
Williamson, R. H.....Milwaukee
Wing, Charles E.....Hartford

* Deceased. ‡ Honorary Member. ¶ Removed from State.

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Witter, G. F.....Grand Rapids
Wolcott, E. B.....Milwaukee
Woodruff, J. B.....Fox Lake
Woodworth, L. P.¶.....Necedah
Woodworth, T. F.¶.....Janesville
Wright, A. B.....Oshkosh
Wylie, D. B.....Wausau
Youmans, H. A.....Mukwonago
Young, Geo. H.....Elkhorn
Zielly, H. E.....Chilton
Zinns, A. J.....Milwaukee

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VOLUME XIV.

TRANSACTIONS

OF THE

STATE MEDICAL SOCIETY

OF

WISCONSIN,

FOR THE YEAR 1880,

WITH ITS

CONSTITUTION AND BY-LAWS,

AND A LIST OF ITS MEMBERS.

Medicina Nusquam Non Est.

MILWAUKEE.
PRINTED BY THE SENTINEL CO.
1880.

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STATE MEDICAL SOCIETY OF WISCONSIN.

OFFICERS FOR 1880-81.

President,

IRA MANLEY, JR., M. D., Markesan.

Vice-Presidents,

B. O. REYNOLDS, M. D., Geneva.

S. L. MARSTON, M. D., Campbellsport.

Secretary and Treasurer,

J. T. REEVE, M. D., Appleton.

Censors,

J. K. BARTLETT, M. D., Milwaukee.

WM. THORNDYKE, M. D., Milwaukee.

N. M. DODSON, M. D., Berlin.

STANDING COMMITTEES.

Arrangements—Wm. Thorndyke, D. Mason, J. K. Bartlett.

Surgery—N. Senn, K. Hoegh, H. Palmer.

Practice—D. W. Moore, Wm. Thorndyke, W. H. Borden.

Obstetrics and Gynecology—W. H. Van Dusen, H. P. Wenzel, D. C. Davies.

Pathology—Ben C. Brett, J. H. Vivian, F. A. Marden.

New Remedies—J. G. Meachem, Jr., Wm. Hausman, John Binnie.

Ophthalmology—E. W. Bartlett, W. F. Whyte, C. Ottillie.

Ethics—For Three Years: J. G. Meachem, Sr., E. L. Griffin, S. L. Marston.

For Two Years: H. P. Strong, P. Fox and G. F. Hunt.

For One Year: Drs. J. K. Bartlett, J. B. Whiting and J. Favill.

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The next meeting of the State Medical Society of Wisconsin will be held in the City of Milwaukee, commencing on the first Tuesday in June, 1881.

The reports of all Standing Committees shall, on their reference to the Publication Committee, be published in the Transactions of the Society. All other, or voluntary reports or papers, shall be referred to the Committee under which the report or paper would properly fall, and such Committee shall decide upon the publication of papers so referred.

The publication of any paper is not to be understood as necessarily an endorsement, by the Society, of the views contained therein.

Resolved, That no papers shall be read before this Society, when in annual meeting, that will take more than twenty minutes to read; if longer, a synopsis must be given, and the essay must be referred to the Committee on Publication.

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TRANSACTIONS

OF THE

STATE MEDICAL SOCIETY OF WISCONSIN

FOR THE YEAR 1880,

BEING THE THIRTY-FOURTH ANNUAL SESSION.

ART. I.—PROCEEDINGS

MILWAUKEE, May 4th, 1880.

The State Medical Society of Wisconsin met in its thirty-fourth annual session, at the Court House, in the city of Milwaukee, on Tuesday, May 4, 1880, at 8 o'clock P. M., and was called to order by the President, J. G. Meachem, Sr., M. D., of Racine. The proceedings were opened with prayer, offered by Bishop Wells.

The Committee on Arrangements, through its chairman, Dr. Thorndyke, reported as follows:

The Committee takes pleasure in welcoming the physicians of Wisconsin to the Thirty-fourth Annual Meeting of the State Medical Society, and in being able, by the renewed courtesy of the Supervisors, and the politeness of Judge Mann, to receive you in this convenient and pleasant room. We have made for you the best terms possible with the hotels for your stay here, and with the railroads for your return home. We would suggest 8:30 A. M., 2, and 7:30 P. M., as appropriate hours for convening.

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After due consideration, your committee decided to prepare no banquet for this meeting, but later in the session it may have something to suggest as to the social gatherings of the Society in future years. Your committee hopes that in usefulness, interest and pleasure to all present, this annual session will fall behind no previous one.

On motion of Dr. Strong, the report of the committee was accepted, and the recommendation as to the hours for meeting was adopted.

The Board of Censors made a report recommending for membership:

Henry Plagemann, M. D., of Woodland, Dodge Co., graduate of the University of Wurtzberg, 1879; and for reinstatement in membership, Dr. E. F. Dodge, of Fond du Lac, and Dr. J. R. Rundlett, of Hillsboro, Vernon Co.

Which report was accepted, and, on motion, the gentlemen named were admitted to membership.

The President then delivered his annual address, upon "HONOR TO MEDICAL MEN," for which, on motion of Dr. Van Dusen, the thanks of the Society were tendered.

On motion of Dr. E. W. Bartlett, the Secretary was authorized to employ the services of a stenographer to report the proceedings of the session.*

Dr. W. C. Butler made some remarks on the propriety of allowing longer time for the discussion of various subjects, and less time for reading papers.

Drs. E. W. Bartlett, J. K. Bartlett, N. Senn and H. Van Dusen then discussed the propriety of allowing non-graduates admission to the Society.

After which the Society adjourned until 8:30 A. M., of May 5th.

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*Under this resolution the reports of discussions, herein given, are as taken by Messrs. Burke, Kalvelage and Harrison, stenographers.

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MILWAUKEE, May 5, 8:30 A. M.

Society assembled pursuant to adjournment, the President in the chair.

On motion of Dr. Senn, it was voted that election of officers be made the special order of business for 3:30 P. M.

Calling the Roll was postponed to a later hour.

The reading of the minutes of the last meeting was dispensed with, and, on motion of Dr. Strong, the minutes, as printed in the volume of transactions for 1879, were approved.

President: The report of the Standing Committee on Surgery is in order.

Dr. Meacher not being present, Dr. Marks was called on, but before he commenced reading his paper, the President announced that a rule of the Society limited the time of reading papers to twenty minutes, and that time cannot be exceeded unless by vote of the Society.

Dr. Marks then read a paper on The Antiseptic Method of Treating Wounds.

The Censors here made report, recommending for membership:

Dr. S. C Johnson, Hudson, St. Croix Co., graduate of Long Island Hospital College, 1864.

Dr. F. F. Stair, Mazomanie, Dane Co., graduate of Chicago Medical College, 1871.

Dr. Robert W. Hawley, Milwaukee, graduate of College of Physicians and Surgeons, 1879.

Dr. Richard S. O'Connell, Cato, Manitowoc Co., graduate of Albany Medical College, 1871.

And for readmission, Dr. W. H. Gleason, of Mazomanie, a former member of the Society whose membership had lapsed.

On motion, the above report was adopted, and the gentlemen recommended were admitted members of the Society.

Dr. Dodge: There is one idea advanced in Dr. Marks' paper that I don't understand, as stated; that is, the matter of the revitalization of the animal ligature. If I understand the author, he quotes Dr. Lister as teaching that the animal ligature is revi-

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talized and becomes part of the living organization. I do not understand it in that way; my understanding of it is this: that the animal tissue is prevented by the carbolic acid from going on to putrefaction, because absorbed and carried away. It seems to me there is a vast difference, and I would like to hear from the members on that point.

Dr. Reynolds: I understand that Dr. Lister claims that this ligature will not operate as a foreign substance, but is absorbed.

Dr. Dodge: It seems to me that it would be impossible to revitalize dead animal tissue and make it part of the living body into which it is introduced.

Dr. Marks: I would say in regard to that, I agree with the gentleman [Dr. Dodge], as I never have seen anything of the kind, and it doesn't seem possible. I simply reiterate what Dr. Lister has reported; and we must all acknowledge that he, at the present time, is very high authority. I have used more than three hundred of these ligatures, and I never have had hemorrhage follow the use of them; neither have I seen any irritation. I never have seen anything of the ligature after it has been applied. Any gentleman can satisfy himself as to what becomes of the ligature. In eight or ten days you can take hold of the knot and pick it off. You will find that part of the ligature which is deepest in the living tissue is the first disposed of; and this ligature is pointed toward the center while the knot is perfect. I do not claim myself it is vitalized. I only give it as stated in the books.

The paper was then referred to the Publication Committee.

On motion of Dr. Dorland, Professors Jenks, Fitch and Jones, of Chicago, who were present, were invited to participate in the debates. These gentlemen were then introduced to the Society by the President.

Dr. Senn then read a paper, entitled, A Contribution to a Knowledge of Fracture of the Rim of the Acetabulum, based on reports of twenty-seven cases and experiments on the cadaver. The reading of the paper necessarily occupying more than

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the allotted twenty minutes, by vote of the Society, the author was allowed additional time.

The paper, on motion of Dr. Van Dusen, was referred to the Committee on Surgery, as provided by the rules of the Society.

Dr. Senn also read a paper which had been prepared by Dr. J. F. Pritchard, of Manitowoc, on Fracture of the Superior Maxilla, in connection with which was presented a drawing of an approved method of treating such fractures. The paper was likewise referred to the Committee on Surgery.

The next report, being that of the Committee on Practice, was called for.

Dr. E. H. G. Meachem, the chairman of the committee, being absent on account of sickness, Dr. Reynolds, of the same committee, said: It has been my lot, during the past year, to treat a large number of cases of diphtheria; therefore a little discussion upon this matter may be of benefit to us. The Doctor then read a paper on the above named disease.

Dr. Griffin: I would like to say a few words on two points in connection with this disease, simply to convey to the members of the Society the importance which a single factor in this disease has come to have in my mind, and that is, the contagious or infectious nature of diphtheria. I have the painful impression that while this disease is abroad in the State and over our country, making such desolation, and carrying such sorrow to human hearts, members of the medical profession are not fully awake to the importance of recognizing its exceedingly infectious character, and hence are not sufficiently awake to the importance of quarantining primary cases, and all cases. I believe, when we come to have the conviction in our own minds, we can create it in a great measure in the public mind, that diphtheria is very nearly as contagious as small-pox, that it can be quarantined as thoroughly as that disease, and stamped out as effectually. A somewhat special study of the disease during the past two years has convinced me that it is conveyed and spread through a community by personal contact. You will notice in the report we have just listened to—a very interesting and valuable report

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certainly, suggesting to us many useful things—that in the locality referred to, the disease, after its introduction, for a certain time goes over the community in a wave, and subsides, and when in the thought of the profession and of the community it has disappeared nearly, then it springs up again, and another wave sweeps over the community; this wave expends itself only to repeat at other points the same history, and so it goes on over a period of two years or more, intermittent waves visiting the community and carrying off scores of children, then returning and doing the same thing over. You will notice in all endemics or epidemics of this disease that it is characterized by this feature. Now, how is it to be accounted for? We found in our investigation of the disease at New London, Dr. Reeve and myself, an account of which is printed in the last report of the State Board of Health, this same peculiarity in the history of the disease there, and it has manifested itself since our visit in the same way. Now, it seems to me, the disease having originated from some cause—I will not say what—but having once planted itself in the community, that it sweeps over a certain area, becomes limited through precautionary measures partly, and partly from other causes which we do not understand, and subsides; then it takes another focus, and from that single point radiates again and sweeps over another area. Now, it seems to me, that this is attributable to the latent form of the disease, or to its contagious element, whatever that may be, having been retained from some of these cases, coming in contact again with a susceptible individual or class of susceptible individuals, and taking another start from those individuals; thus, by personal contact, it is carried through the community. We found that so at New London. We traced it from distinct points in its history there, from the point where it started after a cessation of weeks, and perhaps months, after it had seemed to disappear. We found it starting from a single point and from that point another wave moving on. Now, we could take one case and trace the disease to the next case, and to the next, and so on until it was lost in the greatness of the number, by personal contact.

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In the town of Friendship, lying just north of my own city, there came from the town or burgh of Bear Creek, a suburb of New London, on the 10th day of April, a young married lady who had buried a child three years old, dead from diphtheria, in the first days of January, the child having been sick four days only. She brought with her a child six months old, pale, cadaveric, emaciated, evidently in a condition of blood-poisoning, yet never having had an explosion of diphtheria. This lady came home to her mother's on a visit with this child. She had two brothers married, one of them with a family of six children, living about twenty rods on one side of the mother, and another brother having one child three months old living about the same distance on the other side of the mother. In all these families, with her child she circulated, from the 10th day of April until about the 18th day of April, when her brother, seventeen years old, in her mother's family, who had dandled her child and held it more or less during her visit there, came down with a violent attack of diphtheria. On the same day a child three months old, of a second brother, in whose family she had spent some time, came down with the disease; this child's crib had been occupied by the visiting child, who had worn a blanket and a loose woolen dress, both of which had been used by the child who had died from diphtheria, and neither of which had been subsequently fumigated or disinfected in any way. Two or three days later two members of the other family where she had visited, the brother who had six children, showed signs of diphtheritic poison. Now this illustrates, to my mind, unmistakably, two things: first, the tenacity of the poisonous element, whatever it may be, of diphtheria, it being retained in these fabrics which had been used by the dead child or the mother, brought this distance, after this length of time, three months or more, and communicating the disease so pronouncedly and so positively that there could be, it seems to me, no question about it. Now accepting this as a fact,—and it is no more pronounced than many others that come under our observation, if we will study them, some of which are incorporated in the

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report which I attempted to make on this subject a year ago or more,—I say, accepting this as a fact in the history of this disease, ought it not to impress itself more upon the mind of the physician than it does? Having these positive convictions in my own mind, I feel pained occasionally to meet with intelligent physicians who not only ignore such facts in their practice and act regardless of them, but even go so far as to ridicule the pronounced convictions of honest students of this disease in this regard, and convey to the community the idea that it is all bosh and nonsense. Now, I feel that the medical profession have a work to do in this direction; that we are taught by these facts that this disease is an eminently infectious or contagious one; that its contagious element is tenacious of life; and that it is our duty to teach the people to quarantine this disease as we quarantine cases of small-pox, and when we come to a more positive conviction, and to make more earnest, persistent and truthful efforts as physicians to do this work, we shall have less trouble from diphtheria.

There is another point that is suggested in this report to which I wish to allude, which it seems to me that as concientious men we ought to study and observe, and that is in regard to positive prophylactic influences. Now, it seems to me, certainly a reasonable thing to suppose that remedies which are potent in the cure of a malady ought to pre-occupy and pre-arm the system against its approach, in some measure at least. It seems to me reasonable that such an idea should commend itself to our thought and to our practice, and I wish the members of this Society, and the profession generally, would make it a practice, just as soon as they are called into a family where there is a pronounced case of diphtheria, to immediately put the other members of the family upon prophylactic treatment. The best I know of is chlorate of potash and tincture of chloride of iron, in moderate doses, three times a day. I believe that in this line of work we have yet very much to learn. The faithful trials which have been made of this certainly give us some encouragement in that direction. I have done it; I did it in the case of this family to

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which I allude. I saw these cases the third day after their attack. The two original cases I spoke of died in twenty-four or thirty-six hours, and the two cases in the family of six children, who were complaining of sore throat, and had an injected and somewhat tumefied condition of the soft parts of the throat, I put immediately upon liberal doses of the iron and saturated solution of chlorate of potash, and so far there has been no further explosion in the family. I cannot say how much that has had to do with it, but I feel conscious that I did a wise and prudent thing; and by practice of that kind taken up by the profession generally, we shall finally demonstrate whether there be really anything in that direction or not. I feel that the thought ought not to be disregarded by concientious physicians, as it is worthy of faithful trial.

Dr. Storrs Hall: I wish fully to give my assent to the paper that has been read, with one exception, and that is the point in reference to the use of alcohol and alcoholic stimulants in the treatment of diphtheria. My experience has been that the alcoholic treatment should be commenced early and should be continued and carried up to the point of incipient intoxication. I do not think that we get the effects of alcohol in this disease, or can see its effects at all very much, until we get the system partially under the control of it; when we do we will see a marked improvement. If the Association will bear with me I will give one or two cases. I do not use the alcohol treatment exclusively. I use it in nearly the same manner as the reporter has given it in his treatment; but what I mean to say is, that it should be commenced early, and that it should be carried to incipient intoxication if possible. In one case a gentleman came from Vermont; I think he arrived home on Friday evening. In the region of Vermont where he had been visiting, diphtheria of a malignant form was rife. On Sabbath morning he discovered a diphtheritic deposit in his throat. It was about 4 o'clock in the afternoon when I got to him. At that time the heat of the skin was such as almost to be oppressive to the hand; the stench from his breath was such

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that it was very difficult to stand near him sufficiently long to make a careful examination. There was diphtheritic deposit on both tonsils, and I saw in a moment that it was a very malignant case. I gave him quinine and iron, and said to him, jokingly: "I want you to drink all the whisky you can and not get drunk." Well, on the next day, Monday, I was there I think not far from 10 o'clock, for I felt very anxious about the case. I found the heat of the skin gone, very nearly all of the deposit gone, the stench of the breath was gone, and his appetite partly returned. I asked him how much whisky he had drank. I will not now say—I will not begin to try to say—but I did not suppose any living man could have taken the amount he had in the time and not been fully intoxicated. I left him then until Wednesday. Wednesday I found him sitting up, his appetite returned, and he was convalescent. I left him with medicines and told him to get more when those were gone, and if at any time his appetite should fail, to let me know it, and not to begin any labor until he had fully regained his strength. I have given this as a case where I believe that the effect of alcoholic stimulants, in connection with the other treatment, was quick and sure.

Another point that I have observed of late is this, that where I have used this treatment early and carried it to the point of incipient intoxication, I have rarely had a second case in the same family or in the neighboring families. That was the case in this one I was speaking of. Last fall I had an isolated case, in the mother of a family, a very severe and very malignant case. It was treated in the same manner. I cautioned the family to keep the children away entirely, but, though I was not obeyed, it did not spread and there was no other case in the family. Another one, last fall, came from the village of Dartford, having been exposed there. It was a child about eighteen months old, and was in a family at Eldorado Mills. It was treated in the same manner, and the result was it did not spread. I cautioned them all about visiting, and but little visiting was done, and there was very little intercourse between

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the families. In the case of children I find that where alcohol is not well borne, and where they will not take it in sufficient quantities at first, that you can gradually increase the quantity until you get them partially under the effects of it. I think the result of my treatment has shown the wisdom of the course.

A Member: The subject of the paper just read, I think, is worthy of thorough discussion, and I would like to see it well discussed by the members of the Society. There is one point in that paper I would like to ask a question about, and that is if it is the general opinion of the profession that we have cases of diphtheria where there is no membrane or no exudation in the throat. There is one place in that paper I noticed where the Doctor said he had had two or three cases of diphtheria and there was no exudation in the throat. My idea of the meaning of the word diphtheria is, a covering or membrane over the parts, and it did not seem really clear why a man should diagnose diphtheria when there was no exudation and no membrane. I would also like to ask Dr. Griffin, in regard to this case where the little girl was brought there, and the others were exposed to it and came down with diphtheria, whether he calculated that those cases caught diphtheria from the clothing, or from the exudation from the child.

Dr. Griffin: Undoubtedly from the clothing. It had been three months since the other child died, and this child had never shown symptoms of the disease.

A Member: You stated this child was very anæmic and pale, but had had no diphtheria, but still you found the other cases contracted diphtheria from this child or the clothing it had worn. In my practice I never had a case in which I diagnosed diphtheria unless there was exudation or a diphtheritic membrane in the throat or passage. I have even seen it on the outside of the throat, a blister, but I never diagnose a case as diphtheria unless I see some symptoms of a diphtheritic membrane or exudation of that kind. I would like to hear the Doctor's explanation of that.

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Dr. Reynolds: All rules have exceptions. All the authorities upon diphtheria have noticed this exception. Sclave, who wrote one of the first treatises—I think a prize essay—mentioned that fact, and I think nearly every standard author of the present day mentions the fact that cases have occurred and do occur without a distinctive membrane. It is so in scarlatina; it is so in almost every disease you can mention—rarely, it is true—that the distinctive symptom is absent. I reported two cases where the symptoms were well marked, except the membrane. I believed them to be diphtheria because the glands were badly swollen, and they had all the symptoms that characterize a diphtheritic case, except the membrane. It is true that they are rare, and a man is seldom justified in calling anything diphtheria unless he sees the membrane. As I said in my report, I have seen cases so evenly balanced in the commencement that I did not diagnose them until the membrane was well formed, and I never did, except in these two instances; but in one instance the glands were badly swollen, the breath fetid, and the disease ran its full course. One of them was very sick. I looked for the membrane every morning, or at each time of my visit, but found none, and there hasn't been any. They were treated right along as cases of diphtheria, and got well. The other case was less marked, but was a fair case. It did not run so long, of course. The cervical glands were not so largely tumefied, and the case got well sooner; but it resembled nothing else as much as it did diphtheria, and diphtheria was in the family. Speaking of these zymotic diseases, I would say that I have frequently had, in the course of my practice, cases of scarlatina where there was no rash, but they had all the rest of the symptoms of scarlatina.

Dr. Vivian: I will say, as the result of a large practice in this disease, that I am prepared to endorse the whole of the paper as read by Dr. Reynolds, not only in his treatment and the failure of all so-called specifics beyond that general treatment which he lays down, but also in his idea that the disease does exist occasionally without the exudation in the throat, just as

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often as we shall find cases of scarlatina in which there is no scarlet rash. I would also like to endorse the idea of Dr. Griffin as to the prophylactic treatment. Wherever I see cases of diphtheria I put the family—all the rest of the children at least—upon such treatment as has been indicated: Chlorate of potash, iron and quinine, and, I am free to say, that I have prevented the spread of the disease in innumerable cases by that means.

Dr. Butler: No subject could be more interesting to the State Medical Society than the one under discussion, and, while we have listened to the experience of others, we must not do away with the facts. Dr. Griffin has very forcibly presented one view of diphtheria. In the paper read by Dr. Reynolds he states it to be about twenty-five years old. If the brother of our worthy President were here he would substantiate my statement that an epidemic raged in the town of Lima about thirty-six years ago. It was the first that had made its appearance, and, as we draw our conclusions from facts, I propose to give the facts of that epidemic. In a very high and dry locality, in a rich farming country, with very intelligent inhabitants, was a school house which was underpinned with stone, thoroughly ventilated, containing six windows. The previous winter there was little or no sickness in that neighborhood. The school closed in March. In the spring the teacher was engaged for the summer school. There were sixty-three scholars of school age in that district. Diphtheria broke out in several points in the district, and sixty-one of those died in the short space of three weeks. Well, you can judge of the effect it had upon the community. Every crack and crevice was searched for a cause, but none found. . We saw nothing more of it and heard nothing more about it until two years afterwards, when it made its appearance in Bloomfield, crossed the Honey Creek, and went up into a sandy region, where no local causes could be detected for it. I think there were five families in which but one case in a family was saved. It would seem to set all logic and reasoning at defiance. It seems to follow the

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same course as scarlatina does, breaking out with virulence in one locality and mild in another. I do not know why it is so. The real purpose for which I arose was to ask the members of the profession whether they have any of them recognized Professor Clark's test for diphtheria, that is in the sound of the heart. I don't know that I have met very many persons who have made use of that test, but all who have recognized it have noticed at the same time the basement membrane and the deposit as being a sort of venereal red. I remember very well Dr. Hall, who has made some very sensible remarks upon the disease, called my attention to a case, which he will remember, of a family in Rosendale who had this symptom, and he told me he recognized that basement membrane. I think the patient died that night.

Let us get all the facts we can. Let us corral the thing if we can, though I do not believe it will corral. Now, as far as the idea of treatment is concerned, I do not see that we have gained anything in the last fifty years in that kind of disease. If it is a fact that it is a blood-poison, and thus depresses the power of life, we have got to meet that. In the proceedings of the State Society last year, the question came up, and Dr. Whiting reported four cases which he treated with whisky. Now, if you find a patient with a pulse of 140, it comes within the old law laid down as long ago as when I was a student, at any rate, that when stimulants are given as sedatives, carry them to the point at which they bring the circulation back to the healthy standard. That is, your dose, no matter whether a drop or a quart. That is the principle upon which typhus fever, when it broke out in Bellevue Hospital, was controlled. With regard to this prophylactic treatment: I suppose that anything that raises the system above this low state is a prophylactic—good air and good exercise—and anything that prostrates may bring on an attack—is sure to when the poison is in the system. I furthermore believe that in all these localities where you get diphtheria, scarlatina, and any of the contagious or infectious diseases, you will find hundreds of systems that have more or less of the poison, but the

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powers of life keep above it, so that it does not make the patient sick, when if those very persons were prostrated from any other cause, these contagious diseases step in and claim them. I do not suppose that medical science has yet gone so far as to be able to tell us why it is so malignant and fatal in one locality or at one outbreak, and not in another, but I do believe this—and I was in hopes the Doctor, who has struck the key-note, would carry it out—namely, that the true problem before medical men for the next century is how far one poison in the system neutralizes the effects of another. Gentlemen, allow me to suggest this idea to you. I was once visiting a medical gentleman who was perfectly conversant with malarial poisons and malarial forms of disease, and he says to me: "Doctor, I have a case of cerebro-spinal meningitis." I went and saw it and condemned the patient to death. I said the patient could not live twenty-four hours. He paid no attention to my remark, and paid no attention to cerebro-spinal meningitis, but considered it as a malarial disease, and treated it successfully. I saw fifteen or twenty cases, and made the same blunder in every case. This thought suggested itself to me subsequently: says I, "Doctor, how frequent is membranous-croup in your locality?" He replied, "I have practiced here thirty years, and I have never seen a case of membranous-croup." Now, the question arises in your minds and in my mind, how far malarial poison is a prophylactic against membranous-croup, and how far it modifies the epidemic. He has told me since that he did not care half so much about diphtheria as he did about the malarial poison. I would be glad if we could, by careful observation and close study and reflection, bring diphtheria and all contagious diseases within the influence of medicine. As Dr. Griffin says, this subject of diphtheria is one worthy of careful observation. I endorse all that he has said, but I do not think that he went quite far enough in the matter of poisons. You are all aware of the fact that in '42 or '44 the cholera broke out in the city of Buffalo with a great deal of malignacy. There was a sewer taken up, and among all the

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inhabitants of that malarial district on the north side of the street, where the sun did not shine, almost every case of cholera died, but on the other side of the street, where the sun's rays had influence, the mortality from cholera was not so great. This teaches us some lessons. We had from the sewer-gas a prostration of the system, and when you came to superadd your cholera, there was no chance for the patient. So far as my experience goes, it is as Dr. Reynolds said: we get it in the best families often in the most malignant form, and I guarantee that if Dr. Meachem was here he would tell you that there could not be a more salubrious district than the district where they met with the fearful mortality already spoken of. I think this discussion can be kept up with a great deal of benefit to the whole Society.

Dr. Griffin: Just one word more, Mr. President, which I meant to say when I was up before. We hear it very often remarked, as we have just now, that this disease is as common among the better class—the more cleanly, the more intelligent, and the more well-to-do class of people—as it is among the poorer class. Now I want to guard you against a fallacy in that statement. It is not every family that presents a fine front and a cleanly, wholesome front yard, that keeps the back yard in any better condition than the poor families do. We often find on investigation that that very class of people are as ignorant of the various unhealthy gases coming from filth sources as the poorer class; and when you come to investigate these cases of diphtheria that occur in neighborhoods where everything looks fair on the exterior, there must be critical and honest work done in the back yards. Now, we have got a great deal to learn, I believe, in regard to the causation of diseases, and diphtheria now comes to the front and challenges our investigation. It presents a bold front to the medical profession, and there is need of earnest work in the line of its causation. I think we are approaching every year nearer and nearer to the focal point of not only that disease but other diseases, and we shall by-and-by reach conclusions that cannot be gainsaid. I

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want to ask this brother in regard to this case where sixty-one died out of sixty-three in one school district: Did that occur during the progress of the school or after the school was closed? And does the Doctor who makes this report conceive it possible that such a calamity could come upon a community without some local, exceedingly operative, exciting cause?

Dr. Butler: It gives me much pleasure to answer the gentleman. As he has alluded to filth in different places, I wish to state how honest the medical gentlemen were who investigated that case. I had nothing to do with it. I was too young. It was just after I was admitted to practice; but a year or two before that Livingston County had lost one of its most estimable citizens, one respected and honored, perhaps, as much as any one. The cause of this man's death was investigated and found to be in the cellar, and from the decomposition of apples, potatoes and turnips, and where also a barrel of cider was leaking out so as to undergo fermentation. I shall never forget that we sent a big Irishman into the cellar to clean it out, who fell as flat as though he had been knocked down. I was younger then and stronger than I am now, and I went in and took him by the collar and got him out. And it was in view of these facts that every crack and crevice about that neighborhood was searched for the cause of the malignancy of this disease.

A Member: Do we understand this cleaning was done before the outbreak?

Dr. Butler: I refer to the case two years before where the man died; that was what aroused the attention of the physicians to it—to the causes of the malignancy of this disease—and there could be no cause detected in Dr. Blake's case.

Dr. Manly: I want to say to some of our young friends who have undoubtedly seen more or less of diphtheria, that the time may come when they may see it in the epidemic form, and there is one danger that will come to them then with these specifics with which we now feel so tolerably safe. We feel quite safe with these sporadic cases, but the time comes when

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we see it in a different form; and I will say to my young friends, when you are called to your first case and find your patient spewing bloody secretions out of his mouth and his face and neck swollen as though he had been poisoned by the bite of a serpent, things will look very bad to you, and your specifics will fail, I imagine, in some of those cases. Now, here is the danger. You get demoralized; you seek for another remedy. Some of your patients will die, and you will be inclined to drop your whisky, and quinine, and chlorate of potash, and tincture of iron. Don't do it, is my advice. Stick right to your business. I have been through one of those times and know something about it, and, although we sometimes fail, we cure them generally. I have had very little experience with whisky—quinine has answered me very well. I begin with twenty grains the first dose for an adult. Generally, the next morning, if the membrane is dropping off, I give very little else but chlorate of potash and iron.

Dr. Reynolds: I would like to make a suggestion, or inquiry. There has nothing been said here in relation to the local treatment. I remember that two, three or four years ago,—all the time since we have been talking diphtheria in this country, local treatment has been strongly relied upon by many medical men, and it is yet, to some extent. I have been growing less and less in favor of local treatment for the last twelve years, and I would like to hear from some one who still advocates it otherwise than as a great soothing element to the throat. We used to think it was a local disease, twenty years ago, and used acids, alkalies, astringents and the like, with very poor success. Latterly we depend more—at least I do, and I think my brethren do—upon constitutional treatment. Since Ziemssenn's Encyclopedia of Medicine came into this country, which has been only a few years, there has been another scramble for local treatment, and they have got a thousand other fanciful things, as I believe, and they report great success, but they all give constitutional treatment. Now, is it necessary—if we have arrived at that conclusion, and we think that local treatment does little or no good—

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to torture those little innocents by swabbing the throat, and gargling, and cauterizing or doing anything else that disturbs them, as long as we can get them to take constitutional treatment?

Dr. S. Hall: I, for one, have never cauterized the throat but once in diphtheria, and I depend entirely upon constitutional treatment for success. I think the diet of the patient is just as essential as medicine. I have seen cases where the deposits have been thrown off, and I have had hopes one day which were destroyed the next, simply from improper food.

Dr. Vivian: I would say, with Dr. Reynolds, that the time was when I used to think it was necessary to swab the throat, and I used to do it pretty effectually, too. I am satisfied that in almost every case I did mischief. I didn't think so then, but I do now. To-day I never attempt to cauterize the throat or swab it. I satisfied myself with the chlorate of potash gargle if they are able to gargle; if not, I gave it in small doses, *ad libitum*. I trust to that entirely. I have tried everything, almost, in the way of gargles, from permanganate of potash all the way down, and I have come to the conclusion that the chlorate of potash is the only thing that does good. Local treatment I look upon as amounting to but very little, if anything, merely relieving, it may be, the local irritation, and nothing more. Constitutional treatment, and that only, will cure diphtheria, in my opinion.

Dr. Rundlett: I have been in practice twelve years, and have endeavored to find something that would be successful in combating diphtheria. Every year I have lost many patients by it. I never found anything that I was satisfied with until about four years ago; then I commenced with whisky. I give patients all the whisky they want, so as not to have them really drunk. I don't care how much; by the barrel, if they can take it without getting intoxicated.

A Member: Have you ever had a patient that would get intoxicated?

Dr. Rundlett: I have had several. For local treatment I put turpentine on the throat. I give quinine in large doses,

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and put crushed, rolled brimstone as a local application to the throat about once in two hours, and use tincture of iodine twice a day. I have not lost a case in four years. I do not believe in specifics; but that is the result of four years' treatment. I have had more cases during the last four years than I ever had before, and there has been no trouble so far.

Dr. Butler: On the subject of local treatment, I would say that the most distinguished physician of Rochester was in the habit of using ice externally in those cases where there was a tendency to congestion of the throat. He certainly was very high authority, and many of the physicians of Rochester were in the habit of using it. But it is only in cases where there was congestion of the throat. Aside from that I believe the diphtheritic deposit is simply the weather-gauge showing which way the wind is blowing.

Dr. Rundlett: I became disgusted with chlorate of potash, as there were so many of my patients who could not take it. They complained of pain in stomach, and so on, and I dropped it. I used it alike with all patients, the only difference being the younger the patient the smaller the dose.

Dr. Griffin: I do not want to take up too much time, but there is one more thought I want to suggest in this line of study. I find there are physicians who are not fully decided yet with regard to the possibility of local filth causes of diphtheria. Now, we have malarial poison; everybody admits that; it is accepted as a thing that exists under certain conditions of soil and atmosphere, and becomes more and more active by those conditions. Now, why not admit the possibility and existence of active influences of local causes producing diphtheria? It seems to me we have just as good proof of the one as of the other. . Here is a person who comes down with some form of malarial disease, and he has had the conditions which we accept as inducing that. Here is a person who comes down with diphtheria, and he has the essential conditions which seems to me we ought to accept as producing that disease. One branch of this inquiry lies in my own mind just as positively, and I

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practice it with the same assurance that I do the other. Both are manifestly the result of some foreign active agent introduced into the system, and grouping these facts together, and recognizing the possible and probable cause in primary cases as existing in filth sources, it seems to me, that our line of study, and our line of effort with the people, and our practice as conscientious physicians, becomes very clear and very much simplified. We have malarial poison, which at certain seasons in the year manifests itself but feebly. We have diphtheritic poison, which manifests itself at certain times but very feebly. At other times, both of these poisons come with terrific power on a community and leave sad results. I feel sure that there are certain causes of disease which exist under certain concurrent co-operations of heat and moisture developing the poisonous gases from sources of putrefaction, and furnishing the material poison, whatever it is, the introduction of which into the system causes diphtheria, and accepting this view, from a sanitary standpoint, there is an immense work for us to do among the people, and a grand work. It is more noble and more consistent with our relations to the community than simply the nursing of the sick.

Dr. Butler: I would like to ask the Doctor if he wishes to convey the idea that poison from vegetable decomposition or sewage gas will produce diphtheria?

Dr. Griffin: I believe that filth, whether it be human waste or vegetable decomposition, furnishes some elements which are introduced through the air into the system; that these elements set up some morbid action in the system, resulting in the explosion of various forms of disease; that the same cause may produce at one time typhoid fever, and it may produce at other times diphtheria.

Dr. Butler: Do I understand you to say it may take on Scarlatina?

Dr. Griffin: No, sir; you didn't understand me so.

Dr. Butler: Why not take on those forms as well as diphtheria?

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Dr. Griffin: Because the history of those cases does not teach us that is the fact.

Dr. Butler: You wish us to understand that diphtheria is not a specific poison?

Dr. Griffin: I wish you to understand my view is that the poison which produces diphtheria is a specific poison. Now, the element, whatever it is, may possess different degrees of potency at different times. Here is a family who have lived for years with a stinking privy containing many cubic yards of human waste constantly producing fermentation and poisoning the air; they do not always apparently suffer from it, but there comes a time when they do, when by some concurrence of influences which modify that cause, the emanations from that decomposing mass take on a more active and malignant power affecting the human system.

Dr. Butler: Do I understand you to say that science has demonstrated your theory?

Dr. Griffin: No, sir; I did not say so.

Dr. Butler: Do I understand you to say so now?

Dr. Griffin: No, sir; it is not fully demonstrated; yet I believe that all our investigations, so far, encourage us in that line of study.

Dr. Butler: I don't see it in that light at all.

Dr. Loomis: I wish to offer one word in regard to local treatment, which I have great confidence in, and that is using a solution of carbolic acid and salicylic acid to prevent blood-poisoning to some extent, and also its contagion from being thrown off in the breath at certain times.

Dr. Vivian: I am free to say that I am not a believer in this idea, which has been put out by our Honorable State Board of Health, that diphtheria is essentially a filth disease. I am unable to bring myself to that conclusion from what I have seen in my own experience. My experience coincides with that of Dr. Reynolds, and he points to the fact that it makes its appearance amongst the highest and the lowest, in the most depressed and the most elevated localities, and we get it in

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more virulence often where all those elements which go to produce filth-poison are absent. We see it on the open prairies. One of the worst, or amongst the worst, cases I ever had was in a family that lived in a farm house built on the top of a knoll, with the stables and filth-producing appurtenances removed from the house quite a distance, the water good always, and the family essentially cleanly; and yet I had the worst case in my whole practice of a year or a year and a half, when we had those times of epidemic, in a house of that character. Now, then, where can the filth-producing elements arise in such a case? And this is not an isolated case. I do not want to belittle the ordinary sanitary protections. I am as settled a believer in the necessity of them as is my friend Dr. Griffin; but when he goes so far as to lay down almost as an axiom that diphtheria is essentially a filth disease, I beg leave to disagree with him.

Dr. Hall: I would like to say a few words in regard to this subject of diphtheria. I have had some little experience the past two years with this disease, and in regard to the origin of it I have made some observations.

Now, I will relate as briefly as possible the origin of it in our village at Monroe. In a house, two years ago last March, there was the first case that had occurred in Monroe for many years. As many of you well know, Monroe has a high elevation, and, so far as the natural situation is concerned, and the natural drainage of that side of the village, it is very good and favorable. But this particular house that I speak of, where I was called to see the first case that I saw during that epidemic from which we suffered quite severely, was an old house; its timbers were rotten, its roof was leaking. You will remember that two years ago, or the season prior to that time I am mentioning, it was very wet, and in the fall we had a very heavy rainfall, and also in the winter we had a great deal of rain. The cellar of this house was partly filled with water; the ceiling overhead in the cellar was covered with green mold. There were vegetables. I don't know whether there was any animal

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decomposition going on there or not, but there was a smell of decay and of rottenness throughout the house. So that in going into the house I was almost suffocated with the offensive odor. The child that I was called to see was some six or seven years old, and the mother told me that it had been suffering from a sore throat. I pronounced the case one of diphtheria. It was past help and died during the night. In that family were four children, who, I think, had attended the school during the sickness of the child just now mentioned. A little child that was sitting in the seat with this child, was taken with diphtheria, which took on the same malignant form and died. The other children were taken, but saved. In that house was also a child visiting from the country. That child was sent home during the sickness and before the death of the first child in the house. That child went into a healthy locality. In that family were two other children, making three; the child went home with a sore throat. It developed into diphtheria, as I am informed by the physician who attended it. It died, and the other two children died. That formed the nucleus from which it spread. We had five or six cases in Monroe, in addition to the ones I spoke of as dying, but they recovered.

Going on, however, a little further with the history of this family. Three more of the family of five children had diphtheria immediately following this, and all died. And the next fall when cold weather came on the only remaining one was taken with the same disease, but happily it recovered.

Now, if this disease did not originate in the unsanitary condition of that house, it would be very hard to account for it. No other case for years had happened there. I don't think it demonstrates it beyond any doubt, but it is a very extraordinary coincidence, to say the least, to have it occur under the very conditions under which medical men universally consider favorable to its development. It occurred there, and didn't occur under circumstances favorable to health where they have cleanly houses, where the sanitary conditions are all perfect, good and fair. But after it started, then the poison seemed to disseminate itself

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through the town, and the houses became infected. One peculiarity about this disease is that it prevails during the cold months, commencing this last year in our village in September, the first case.

We had a good many cases of diphtheritic croup this year, more than before, although we had quite a number last year. At first we lost all of the cases of diphtheritic-croup, but we lost very few during the past epidemic.

Without desiring to take up any more time, I wish to say one word in regard to the treatment. I have found nothing myself so efficient, so reliable, as calomel in large doses, frequently repeated, even when they seemed to be dying from diphtheritic-croup, when they could scarcely get breath enough to aerate the blood.

I do not dread, as I used to, being called to a house where some one is suffering from that disease, when before I reach the door I can hear the dreadful cough, and that sound which I presume every physician has listened to with dread—that diphtheritic croupy cough which is so nearly allied to death. If my patient is three or four years old, I give some ten or fifteen grains, and repeat it every hour until it operates upon the bowels. If it does not operate after giving three or four doses, I would follow it with some castor oil. In not a single case have I failed to remove the membrane. I often get it loose when the child is so prostrated as to not recover. I have used the various remedies that are universally used; but I do not use anything else while using that. Immediately afterwards I follow it up with ordinary treatment of tincture of iron, tonics and stimulants, frequently repeated, and when I find my calomel doesn't the first time remove it, I repeat the same process, but accompanying it with spirits of turpentine given in large doses, making a very strong emulsion, stirring the calomel up with it, and give it without stopping very carefully to measure my doses. That has been my experience, and that experience I think is confirmed by other physicians there, that is, in the vast majority of cases of diphtheritic-croup. These cases of diph-

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theritic-croup are cases that concern us the most, because they are the more difficult to control. I think the other physicians in Monroe will tell you that by using this treatment, which I have urged upon them in cases of well-marked diphtheritic-croup, that a very large per cent. of the cases have recovered.

A Member: What number of cases of diphtheritic-croup, as you call it, do you think have occurred in Monroe?

Dr. Hall: I am ashamed to acknowledge that I cannot give you the number, though I ought to have done so. I have had not more than ten or twelve well marked cases.

A Member: What proportion of your cases have recovered under the calomel treatment?

Dr. Hall: I have not lost one case, except it had existed a week, or when it was in *articulo mortis* when I was called.

A Member: During the attack of diphtheritic-croup, about how many have lost their voice?

Dr. Hall: I recall but a single case.

A Member: Did that case recover?

Dr. Hall: Yes, sir; it is alive now. After giving it tonics it gradually recovered, and it is in good health to-day; but it was quite a number of weeks before the child—some ten or twelve years old—could walk.

On motion of Dr. Van Dusen, adjourned till 2 o'clock.

AFTERNOON SESSION, 2 o'clock.

President: When we adjourned we were on the subject of diphtheria. If there are no further remarks on that subject, we will proceed to hear Dr Dorland's report on the Practice of Medicine.

There being no response, the report of the Committee on Obstetrics was called for.

Dr. Hunt proceeded to read a paper on Uterine Hemorrhages.

Moved by Dr. Van Dusen that the paper be referred to the Committee on Publication.

President: This paper is open to discussion.

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Dr. Barry: I move that Professors Fitch and Jenkins, of Chicago, be invited to discuss this paper.

President: As they are delegates from the State of Illinois, they have the privilege of discussing any paper, and we will be glad to have them join in so doing.

Prof. Fitch, who was received with applause, said: Mr. President, and Gentlemen: As the reporter states, this is undoubtedly one of the most important subjects connected with obstetrics,—not only that hemorrhage occurs during abortion and premature labor, but at full time. The reporter has divided the subject of abortions and premature labor at the close of the fifth month, I believe, and I propose to divide those according to the stage of utero-gestation, in reference to the viability of the child. That I consider to be less than six months. Previous to this time it is an abortion—after that, and before the full period of utero-gestation, it is premature labor. With regard to the cause of this hemorrhage in abortions, I do not know that I have any remarks to make.

With regard to the principal part of the treatment which has been laid down by the reporter, I do not know that I have any criticism to offer; still, I think that the reporter does not go sufficiently far. He does not mention, as I understand it, some of the most important means for the relief of this hemorrhage occurring in abortions. Rest and opium, where you wish to prevent the completion of the abortion, are undoubtedly the first essential things. However, we know very well that opium is often not well borne, but that it causes nausea and vomiting, and thus produces a pressure upon the uterus, through the abdominal walls and the diaphragm, which has a tendency to dilate the os uteri, and favors the expulsion of the ovum. We have these difficulties to contend with. Now, he says: "Give full sedative doses of opium." I suppose under the Alonzo L. Clark plan of treatment, where there is serious inflammation, the measure of the dose of opium is always that dose which will relieve the irritation and cause sedation. In these cases we have quite sufficient sedation from the loss of blood, and I think

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the measure of the dose should be that quantity which will relieve the irritation and pain. Now, when abortion is considered inevitable, when it is decided in our minds that gestation cannot continue, that it must be completed, then there arises a question as to the best method of completing it. If the loss of blood has been great, and the life of the mother is in jeopardy from this loss, and the os uteri is not dilated and not dilatable, the question is, what is to be done under these circumstances? Here the use of the tampon, for the plugging of the vagina, I consider one of the most important measures in the treatment of these cases of abortion. Of course it necessitates loss of the ovum, but it is a sure mode of arresting the hemorrhage and thereby, in a great majority of cases, saving the life of the mother. This may be done by the introduction of a sponge tent into the os uteri, or by packing the vagina full of old cotton cloths, or as I have used sometimes, my pocket handkerchief, or by cotton batting saturated in some antiseptic solution; usually I put it in dry, using no solution whatever. This is allowed to remain in for about twelve hours, the patient being kept in a recumbent position, the head low and the hips elevated; then it is gently removed. We find, as a rule, after this length of time, that the os uteri has been pretty thoroughly dilated, and you will probably find the ovum in the os or in the cervical canal, in such a position that it can be readily hooked out by the finger or otherwise. Of course this tamponing of the os uteri or vagina should never be done without you have concluded that the loss of the ovum is inevitable.

I must offer my evidence against the practice of the use of ice, either externally or internally, for the arrest of hemorrhage under these circumstances. I believe the exposure of the patient to this cold, and to the dampness in the bed, etc., is liable to cause her to take cold, and to violent reaction, in such a way as to render her final recovery more doubtful. This is only my individual experience. I believe in keeping the patient as dry as possible, and I have little confidence in the internal or external application of ice.

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Now, another practice, which may be used under these circumstances, is to rapidly dilate the os uteri by various means, by the Burns' dilator, or by Steel's, or Head's dilator—which is simply a modification of Burns'—or by the graduated dilator of Skeyne, of New York. He has various numbers of them, which screw into a single handle, and he fits in the smaller one first, and then a little larger, and a little larger one still; and he says in the course of an hour he can dilate the os uteri sufficiently to introduce the finger to hook around the ovum and bring it away. This rapid dilatation I have never tried; I believe, however, it can be done, because surgeons have done it; but, at the same time, I would rather trust to gradual dilatation by the use of the tampon, and by the hydrostatic pressure exerted upon it by the oozing of the blood. I would rather trust to that than to the rapid dilatation. Now, when the os uteri is sufficiently open and bleeding continues, if you can feel the ovum, or if it has passed beyond the three months and you can feel the placenta in the os uteri, you may depress the uterus with the hand upon the abdomen, so that you can introduce the finger into the cavity of the uterus and hook it out. This is spoken of by some professors as being a very easy manipulation, or a very easy operation; but I must say that my finger is so short, or my manipulation so poor, that, in the majority of cases, I am unable to depress the uterus sufficiently low to get my finger in the fundus uteri to hook around the ovum. Under these circumstances, I do not hesitate to use the placental forceps. I use Elliott's forceps, or the old-fashioned Lewis' forceps, single curve, or, what I think is perhaps better, Professor Roler's forceps, of Chicago. The blades of Professor Roler's forceps are made precisely the same as Elliott's, but one blade does not revolve around the other, as, perhaps, most of you know Elliott's do, but it is arranged on the same principle. The joining is the same as in most obstetric forceps, so that you can introduce one blade at a time, and then hinge it or join it. In that way you can get around the ovum so as to withdraw it. I think it is a very nice little instrument, and recommend it

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above any other placenta forceps made. I make it a point, when the os is dilated sufficiently to introduce any one of the placenta forceps, or to get my finger into its cavity, to deliver that placenta, or that ovum, or whatever it may be, in the cavity of the uterus, and that as rapidly as possible, and, at the same time, I give to the patient ergot sufficient to produce strong contractions of the uterus. I am a strong advocate of, and a strong believer in, the use of ergot, and in its exercising upon the walls of the uterus a strong tonic effect; that it constricts the surface. That it constricts the uterus in its center, thereby endangering hour-glass contraction, I do not believe. I have used ergot for a great many years and have never had any such result; and where I used it fresh, and had a good preparation, I used to get a favorable response—get tonic contractions of the uterus. I do not know but this is all I have to say upon this part of the subject of post natal hemorrhage. Upon the third stage of labor and the treatment of the placenta and uterus after the child is born, I must say that I cannot agree with the reporter in his method of treating this stage of labor. Allowing the placenta to remain within the cavity of the uterus for an hour and a half or two hours, I think, is bad practice. I never have occasion to allow it. I don't know why it is; and yet I never have a case of hour-glass contraction. I haven't had one in twenty years, and I must say I had but very few dangerous or excessive hemorrhages following labor; and I attribute it, perhaps, to my mode of treatment of the third stage of labor. I give my thorough and perfect attention to the condition of the uterus and to the condition of the abdomen after the delivery of the child and until the placenta is delivered, and I never leave the patient for a moment until this is effected. The moment of the delivery I have the husband, or the nurse, place his hand upon the abdomen—and I place the hand there myself in order that they may put it in the proper position—so that the uterus is pressed upwards rather than downwards, which would favor contraction of the uterus. I have this hand placed there until I can place my own there.

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As soon as I have delivered the child to the nurse, I place my own hand over the uterus, across the abdomen, and wait, perhaps five or ten minutes for the uterus to rest a little after its hard labor, and then I grasp the walls on each side with my hand in this manner—the thumb upon one side and these three fingers on the other—and if it does not contract firmly I give it a little impulse to stimulate it so that it will contract. If in one or two pains the placenta is not discharged into the vagina —which I ascertain by the introduction of the finger into the vagina—I then use more contraction with my hand upon the lateral walls of the uterus, and, at the same time, I use traction of the cord. I know this is dangerous doctrine to teach young men who are without experience; they may use too much traction, and they may tear off the cord, in which case they have no guide to the placenta itself; but when one has gained experience in this matter he need never tear off the cord, and may use considerable traction too. I do not know that I ever tore off a cord from the placenta. Never use traction of the cord when the uterus is relaxed, but when it is firmly contracted then traction may be used at the cord, using it in the axis of the uterus, or using it in the axis of the canal in which this lies. If it lies in the axis of the vagina you can use both hands, by winding the cord around these two fingers, then press two fingers up into the vagina, so as to form a pulley on which to draw the cord. When the uterus is firmly contracted, and you are pressing it here upon its lateral walls, draw upon the cord. I have tested to see how much traction I have been in the habit of making where the placenta does not come easily, and I have found it to be about six pounds. I have used traction many times to the degree of six pounds without injuring the cord or without tearing it off. Now, with this pressure upon the walls of the uterus and the traction of the cord, I believe that, although there may be considerable inflammatory adhesion of the placenta to the walls of the uterus, and though there may be considerable calcareous degeneration, which adds to the adhesion and firmness of the placenta itself, yet I am

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enabled in this manner to deliver the placenta without difficulty and without inversion of the uterus, which I never had occur to me, and without hour-glass contraction, which I have never had in nearly thirty years' practice. Neither have I ever had a case of retained placenta from inflammatory or other adhesion. Now, in the exercise of this traction of the cord it is necessary that there should be firm contraction of the uterus, and as soon as the walls of the uterus relax no traction should be made; as soon as it firmly contracts again traction should be resumed; and at the time of the traction the little finger, which rests upon the fundus uteri, is led to observe the condition of the fundus. If there is any depression of the fundus tending to inversion, observed by this little finger placed upon the fundus, then the traction of the cord is stopped at once. Now, in all cases of labor I am in the habit of asking my patient if she has borne children before; if she had excessive hemorrhage. If she has had excessive hemorrhage in prior labor, I am always in the habit of administering a full dose of fluid extract of ergot fifteen minutes, or some such time, before the completion of the second stage of labor—fifteen minutes, or a little more, before I expect the second stage of labor to be completed. I do this for the purpose of securing good, firm contractions of the uterus; and I believe that it has not only the good effect of assisting in the delivery of the placenta, but it has a good effect in helping the uterus to contract firmly and press out of itself all clots and all membranes which may exist there, and thoroughly evacuate and empty itself, and thus you are not so liable to have fever afterwards. I rely very much upon ergot, and I believe in giving it in this stage of labor for the purpose of aiding in the third stage of labor. I give it, perhaps, in more than half my cases.

Thrusting the hand into the cavity of the uterus is, I think, a thing that should be avoided as much as possible. I think most young men that go out into the country now, after graduating from our colleges, are too apt to get the hand into the cavity of the uterus, imagining they have retention of the

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placenta, from some pathological condition. They are afraid to pull the cord, for fear of tearing it—having been taught so; they fear inversion of the uterus, and, as the placenta don't come away, they very promptly perform the heroic operation of the introduction of the hand into the cavity of the uterus in delivering the placenta. I think this is a thing that should be avoided as much as possible, and in my own cases I have not introduced my hand into the cavity of the uterus to deliver the placenta in twenty years, and I believe it is because I have used traction of the cord, — because I assist the uterus in expelling the placenta, not by contraction, as Gray recommends.

One word in regard to hemorrhage following the delivery of the placenta. Now, for fifteen or twenty minutes or more after the delivery of the placenta, I do not loose my grasp of the outside of the uterus. I keep my hand upon it after the delivery of the placenta until the bandage is applied, which is done within twenty minutes or half an hour after the delivery of the placenta, and not before. I see that the uterus is fully contracted, and I have not had a case of concealed hemorrhage in twenty years.

Mr. President, and Gentlemen, I thank you for your kind attention.

Dr. Van Dusen: I would like to inquire of the Doctor if he ever found any cases where a clot is expelled and you never find any embryo following it, but on search you find it contained in the clots?

Dr. Fitch: I always give instructions to the attendants on a threatened case of abortion, to examine closely, or to save for my own personal examination, all the clots and all the substances that are discharged from the vagina. It may be that the ovum has been discharged previously, and those clots may have been thrown away; in that case, of course, you have the usual symptoms of completion of an abortion, by the cessation of pain, and the cessation of flooding, and this gives you the clue to the fact that the ovum has been discharged.

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Dr. Van Dusen: It has been very common, in the course of my practice, that the attendants will say—perhaps I am not called until after there has been an expulsion of the fœtus,—"Certainly there must be something behind; there has been nothing but clots." Perhaps these have been thrown away, so that it is sometimes a very difficult matter to explain and make the nurse understand that the case is disposed of. As you remark, I always found a cessation of the flowing after the disappearance of the fœtus.

Dr. J. K. Bartlett: I have been exceedingly interested in the remarks of my friend from Chicago, and I have been the more so because the details which he has given of his own practice have been abundantly corroborated by my own experience. He says he has not introduced his hand into the cavity of the uterus for twenty years. I have but once during the whole of my practice, that I remember. In that one case the placenta was sufficiently adherent to give necessity for it. I believe that the practice which the Doctor has inculcated here will almost uniformly result in the expulsion of the placenta, without any difficulty, and in a very short time after the second stage of labor is completed. I have no desire to make a speech; I have advocated this doctrine before, and I merely wish to corroborate.

A Member: I would like to ask the Doctor if he considers the application of the bandage of any service in preventing hemorrhage, after a delivery. If I did not misunderstand the Professor, he said he would apply the bandage about fifteen minutes or so after the delivery. I want to know whether this application of the bandage is a preventive of hemorrhage?

Dr. Fitch: Mr. President: That is rather a staggerer. I don't know that I can say that the application of the bandage has very much influence in the prevention of hemorrhage, but I do believe—and perhaps that covers the ground and makes it an aid—that it does aid in keeping up contraction of the uterus, the same as the hand does when upon it. I always use the bandage. I do not think it is of very much service, except

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for the comfort of the patient at the time. I think it usually makes them more comfortable and keeps up the usual hand-pressure on the abdominal walls. I do not think it does very much towards restoring the form of the patient, but I rather think it aids a little in preventing concealed hemorrhage; and so long, gentlemen, as a line of treatment serves my purpose, and is universally or uniformly so successful, I adhere to it. I praise the bridge that carries me safe over.

A Member: As Prof. Jenks is about to leave, we would like to hear from him before he goes.

President: The hour for the election of officers has arrived; if it can be postponed I should be very glad to hear the Professor speak.

Upon motion of Dr. Van Dusen the election of officers was postponed until 4 o'clock.

Dr. Jenks: Do I understand I am called upon?

President: Yes, sir.

Dr. Jenks: I thank you very much; but I have not heard the paper read, and if I discussed anything I should have to discuss my friend Fitch's remarks, that is all.

Dr. Fitch: I would like to rise to explain. My friend on the right here says I deliver the placenta by traction of the cord. He only expresses a part of the course that is used for extraction of the placenta. It is compression and traction of the cord.

Dr. Reynolds: I do not wish to detain this body but a moment. We old physicians were taught years ago that large doses of opium and large doses of ergot, especially in premature labor, were dangerous to administer. I have seen, I think, well marked cases of the absorption of ergot in the fœtus. A teacher in Rush Medical College at one time taught that if he wanted to produce an abortion successfully he would feel as much confidence in giving large doses of opium in producing it as any other drug contained in the materia medica. Now, I would like to inquire of some of these gentlemen—we are all here for instruction—whether that theory of absorption with the later

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gynæcologists and professors has no longer any effect, or if it has proved untrue. I certainly would hesitate to put a patient, where I expected or hoped to stop premature labor, under large doses of opium, from my previous knowledge and education on the subject. If that is the remedy, as our friend says, in cases of premature labor, even where you hope to arrest it, why I have been practicing too carefully all my life, and I would like to hear some opinions on that subject.

President: I suppose, gentlemen, as we have postponed this matter for the purpose of hearing Dr. Jenks, and he is not going to speak, we had better go on with the election of officers at the time we first fixed, which was half-past three.

Dr. Van Dusen's motion that the paper of Dr. Hunt be referred to the Committee of Publication was concurred in.

Upon the request of Dr. J. C. Hall, the roll of membership was now called. The following list embraces all who responded or who were known to be present during the session, members admitted during present session excepted:

John P. Bading, Milwaukee.
J. R. Barnett, Neenah.
John S. Barry, Prairie du Chien.
E. W. Bartlett, Milwaukee.
J. K. Bartlett, Milwaukee.
L. J. Barrows, Janesville.
John Binnie, Poynette.
W. M. Blair, Darlington.
W. H. Bordon, Milton.
J. L. Brenton, Beloit.
Ben C. Brett, Green Bay.
S. O. Burrington, Columbus.
Wm. C. Butler, Janesville.
H. L. Butterfield, Waupun.
Geo. H. Calkins, Waupaca.
Geo. E. Catlin, Geneva.
D. C. Davies, Columbus.
M. M. Davis, Baraboo.
F. H. Day, Wauwatosa.
E. F. Dodge, Fond du Lac.
James Dorland, Milwaukee.
Wm. Eastman, Mineral Point.
John Favill, Madison.
M. H. Fisk, Depere.
Phillip Fox, Madison.
William Fox, Milwaukee.
H. T. Godfrey, Benton.
Alois Grættinger, Milwaukee.
E. L. Griffin, Fond du Lac.
Storrs Hall, Rosendale.
J. C. Hall, Monroe.
Herman E. Hasse, Milwaukee.
William Housman, Ashford.
E. G. Horton, Whitewater.
Geo. F. Hunt, West Bend.
D. LaCount, Chilton.
H. E. Lindsey, Avoca.
E. E. Loomis, Janesville.
H. E. Mann, Marinette.
Ira Manly, Jr., Markesan.
F. A. Marden, Milwaukee.
Solon Marks, Milwaukee.

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S. L. Marston, Campbellsport.
Darius Mason, Milwaukee.
J. G. Meachem, Racine.
J. G. Meachem, Jr., Racine
Wm. Meacher, Portage.
C. J. Miller, Whitewater.
D. W. Moore, Waupun.
Henry Palmer, Janesville.
J. F. Pritchard, Manitowoc.
J. T. Reeve, Appleton.
B. O. Reynolds, Geneva.
C. W. Robbins, Milwaukee.
J. A. Russel, Cedarburg.
G. A. Stark, Milwaukee.
Nicholas Senn, Milwaukee.
C. M. Smith, Evansville.
Geo. M. Steele, Oshkosh.
H. P. Strong, Beloit.
Wm. Thorndyke, Milwaukee.
Harmon Van Dusen, Mineral Point.
J. H. Vivian, Mineral Point.
J. S. Walbridge, Weyauwega.
H. P. Wenzel, Lomira.
W. F. Whyte, Watertown.
O. W. Wight, Milwaukee.
R. H. Williamson, Milwaukee.
G. F. Witter, Grand Rapids.
H. E. Zielly, Chilton.

The Board of Censors here made a report recommending for membership the following gentlemen:

Dr. J. Clark Bliss, of Jefferson, Jefferson Co., a graduate of Cincinnati College of Medicine and Surgery, 1875.

Dr. G. T. Loomis, of Cascade, Sheboygan Co., a graduate of Ann Arbor Medical College, 1869.

Dr. Hein Terhorst, of Richfield, Washington Co., a graduate of Chicago Medical College, 1880.

On motion, the report of the Censors was adopted, and the above-named gentlemen admitted to membership.

The hour fixed by previous vote for the election of officers having now arrived, the Society proceeded to such election, with the following result, Drs. Wenzel and Senn having been appointed tellers:

President—Dr. Ira Manly, Jr., of Markesan.

Vice-Presidents—Drs. B. O. Reynolds, of Geneva, and S. L. Marston, of Campbellsport.

Secretary and Treasurer—Dr. J. T. Reeve, of Appleton.

Censor—Dr. J. K. Bartlett, of Milwaukee.

On motion of Dr. J. K. Bartlett the President and Secretary were authorized to execute credentials to the delegates that the Society is entitled to send to the American Medical Association for the coming year, and to State Societies also.

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Dr. Senn: If it is now in order your Committee on Medical Legislation have a very brief report to make.

Your Committee on Medical Legislation begs leave to make the following report: In accordance with your instructions your Committee, soon after the adjournment of the State Medical Society last year, met in the city of Milwaukee, jointly with committees appointed for the same purpose by the Homœopathic State Medical Society and the Eclectic State Medical Society. After an organization was effected suggestions were made and discussed and the salient points of a bill "To prevent unqualified persons from practicing Medicine and Surgery in the State of Wisconsin," were agreed upon. The drafting of the bill in a legal form was entrusted to a sub-committee of three, one representative from each of the State Medical Societies, who, with the assistance of an attorney-at-law, prepared a bill, which was adopted by unanimous vote at a subsequent meeting of the joint committee.

The bill was placed in the hands of Mr. Burdge, a Member of the Assembly from Rock County, who displayed great ability and zeal in his efforts to secure its passage. After it was presented to the Legislature, it was referred to the Committee on Medical Societies, before whom several members of the joint committee appeared and explained the scope and necessity of the proposed measure. Your committee are under obligations to many members of your Society who took an active interest in the matter and supported your committee by petitions and personal exertions in behalf of the bill. When it became apparent that all efforts would be unavailing to secure its passage by the Legislature, at the request of your committee, the bill was indefinitely postponed. Your committee append a printed copy of the bill.

All of which is respectfully submitted.

N. Senn,
J. K. Bartlett,
H. P. Strong.

A Bill to prevent unqualified persons from practicing Medicine and Surgery in the State of Wisconsin.

Section 1. It shall be the duty of the Governor within ten days after the first day of July, A. D. 1880, to appoint, by commissions in writing, in the manner hereinafter provided, seven persons to constitute a State Board of Medical Examiners, for the purpose of this act. Each person so appointed shall be a graduate of some medical college, authorized by the State or country where the same may be located, to confer the rank or

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degree of doctor of medicine, and shall be an actual practitioner of medicine and surgery.

SECTION 2. The members of such board, so to be appointed as aforesaid, shall hold their offices for one, two, three, four, five, six, and seven years respectively, from the date of their appointment, as the Governor shall designate in such commissions, and until their successors in office shall have been duly qualified; and thereafter, within ten days after the first of July of every year, the Governor shall appoint one member of such board to hold his office for the term of seven years from the date of his appointment, and until his successor in office shall be duly qualified.

SECTION 3. For the purpose of appointing the first seven members of such board, as aforesaid, the Governor shall, on or before the first day of July, A. D. 1880, request the State Medical Society of Wisconsin to nominate eight of its members, the Homœopathic Medical Society of the State of Wisconsin to nominate four of its members, and the Eclectic Medical Society of the State of Wisconsin to nominate two of its members, for such appointment; and of the persons which may upon such request be nominated as aforesaid, the Governor shall appoint as members of said board four persons belonging to said State Medical Society of the State of Wisconsin, two persons belonging to said Homœopathic Medical Society of the State of Wisconsin, and one belonging to said Eclectic Medical Society of the State of Wisconsin.

SECTION 4. In case any vacancy shall occur in said board by the death or resignation of any member thereof, the Governor shall, as soon as may be, request that one of the aforesaid societies, to which such decedent or resigning member shall have belonged, within ten days after, to nominate two of its members to fill such vacancy, and, upon such nominations being made, the Governor shall appoint one of the persons so nominated as a member of said board to fill such vacancy for the unexpired term of the member whose place shall have become vacant. The like proceedings, as those last above provided, shall also be had, so far as applicable, with reference to the appointment of the successors in office of these members of said board whose term of office shall expire by lapse of time, for which purpose nominations shall be made to the Governor on or before the first day of July of each year.

SECTION 5. In case any of said medical societies shall fail, within the time above limited, to make nominations for membership in said board as above provided, then, in that case, it shall be the duty of the Governor forthwith to appoint as members of said board the requisite number of persons of his own selection, belonging to that one of said medical societies so failing to nominate.

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SECTION 6. Should, however, at any time after the first appointment of said board, any material change take place in the ratio between the number of the active members of any one of said three medical societies to be represented in said board as aforesaid, and the number of the members of any other of said societies, then, in that case, it shall be the duty of the Governor, on being satisfactorily informed of such change, before making any further appointments pursuant to this act, so to readjust the relative number of the members of said board to represent said medical societies, that the ratio of the number of members of said board representing one of said medical societies to the number representing any other of said societies, shall conform, as nearly as may be, to the ratio then existing between the respective numbers of the active members belonging to the same societies.

SECTION 7. Each person appointed as a member of said board shall receive immediate written notice from the Governor of his appointment, and, if he accept such appointment, he shall, within fifteen days after the date of such notice, go before some officer legally authorized to administer oaths, and make oath that he is a regular graduate of some medical college, naming it, and stating the date of his diploma from the same, and that he will faithfully perform the duties of his office as a member of said board; thereupon, he shall receive from the Governor his commission of such appointment. The oath of office, and a duplicate of the commission of appointment of each member of said board, shall be filed and kept in the office of the Secretary of State.

SECTION 8. At least five of the first seven members so appointed and qualified to constitute said State Board of Medical Examiners, shall, within thirty days after their appointment, meet at some convenient place in the city of Milwaukee, in this State, for the purpose of organizing, and shall then and there elect from their own number a president and a secretary, who shall hold their respective offices until the first annual meeting of said board, which shall be held at such place as shall then and there be selected by said board, on the first Wednesday after the first Tuesday of January, A. D. 1881, and until their successors are duly elected and qualified. At such annual meeting, and at every annual meeting thereafter, said board shall elect like officers to hold their respective offices for the term of one year, and until their successors are duly elected and qualified. At said first meeting, said board shall adopt such by-laws, not in conflict with the laws of the United States or of this State, or the provisions of this act, as it may deem proper, respecting its duties and those of its members and the transaction of its business; and at said first meeting said board shall also adopt a device for a seal, and shall as soon as may be thereafter, procure such seal for the use of said board.

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In said first meeting of said board, as well as in all subsequent meetings, whether annual, stated or special, at least five of its members, representing the three medical societies mentioned in Section 3 of this act, shall be required to constitute a quorum for the transaction of any business whatever, except, that any less number may, in the absence of such quorum, adjourn such meetings to a future day.

SECTION 9. It shall be the duty of said board, at its first meeting, to select and appoint suitable places in this State at which to hold stated meetings for the examination of applicants for license to practice medicine and surgery in this State, and for the examination of candidates, pursuant to the provisions hereinafter contained. In selecting such places for holding such meetings, said board shall, as far as may be practicable, accommodate applicants for license and candidates for examination under this act, residing in different portions of the State. Notice of the time and place of every such meeting, stating the purpose thereof, shall be published in some of the city newspapers, printed and published in the county where such meeting shall be held, at least once a week for four successive weeks, next prior to such meeting.

SECTION 10. Said board shall, prior to the first day of January, A. D. 1881, prepare, and cause to be printed in sufficient numbers, three forms of license for the practice of medicine and surgery in this state, to wit: one form suitable for any person holding a diploma from a medical college; one form suitable for any person holding a certificate of membership of one of the three medical societies mentioned in Section 3 of this act; and another form suitable for any candidate examined by said board, and found qualified as is hereinafter provided.

SECTION 11. From and after the first day of January, A. D. 1881, it shall be unlawful for any person to practice medicine or surgery in this State, who shall have not been first thereunto duly licensed by said State Board of Medical Examiners, in the manner hereinafter provided, saving only such persons as are hereinafter specifically excepted and exempted from the provisions of this act.

SECTION 12. No person shall be permitted to make any application to said State Board of Medical Examiners for license to practice medicine or surgery in this State, unless he or she shall first hold either a diploma, duly signed and delivered to him or her by some medical college in good standing, authorized by the laws of the State or country where it is located, to confer the rank or degree of "Doctor of Medicine," or a certificate duly issued and delivered to him or her by one of the three of said medical societies mentioned in Section 3 of this act, to the effect that such applicant then is a member in good standing of such medical societies, or unless he or she shall first be examined by said board touch-

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ing his or her qualifications to practice medicine and surgery, and found qualified for such practice as hereinafter provided.

SECTION 13. Any person desiring to practice medicine or surgery in this State after the said first day of January, A. D. 1881, and possessing either a diploma from some medical college, or a certificate of membership of one of said three medical societies, as aforesaid, may apply to said State Board of Medical Examiners for a license to practice medicine and surgery in this State, by depositing, either in person or by proxy, with the secretary of said board, a written application for such license, together with his or her said diploma or certificate, as the case may be, duly verified as hereinafter provided, and at the stated meeting of said board next ensuing after any such application, said board shall examine every such diploma and every such certificate of membership in one of said three medical societies, as to the genuineness thereof, and as to whether the same is issued to the person depositing the same with his or her application for such license; every such diploma, and every such certificate so deposited with any such application for license, shall be first verified by the affidavit of the applicant for license depositing the same as aforesaid, subscribed and sworn to before some officer authorized to administer oaths, to the effect that such applicant is the lawful possessor of the same, and the person therein named and designated, and to whom the same was issued; and in case said board, or any member thereof, shall have any doubt as to any of the facts stated in such affidavit, said board, or any member thereof, may examine such applicant under oath, and may require corroborating evidences of such facts, either by the testimony of witnesses or otherwise; and may also require the attendance before them of witnesses, and the production of such other proofs as may come to their knowledge, whereby any such affidavit may be contradicted, or controverted, or proven to be false; and for such purpose, any justice of the peace, or clerk of any court of record in this State, shall, on demand of any member of said board, issue a subpœna requiring such witnesses to appear before said board, there to give evidence relative to the matter set forth in such affidavit; and any member of said board shall be authorized to administer oaths for the purpose of this act. Thereupon, after having examined such proofs, said board shall determine whether such diploma or certificate is genuine, and issued to the person depositing the same with such application for license as aforesaid, or whether there is probable cause to believe that such supposed diploma or certificate is spurious, or that the applicant for license so depositing the same is not the person to whom the same purports to have been issued; and if, upon such examination, said board shall determine that there is probable cause to believe such diploma or certificate to be

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spurious, or not issued to the applicant so depositing the same as aforesaid, then such board shall cause such determination to be entered at length on the minutes of such meeting, and shall thereupon forthwith cause a copy thereof, certified by its secretary, to be transmitted to the district attorney of the proper county, to be acted upon by such district attorney as hereinafter provided. If, however, aforesaid board, upon due examination, shall determine that such diploma or certificate is genuine, and is issued to the person depositing the same, then said board shall, upon payment of a fee of two dollars by such applicant to its secretary, issue and deliver to such applicant a license in writing, sealed with the seal of said board, and subscribed by at least five members of said board, representing said three medical societies mentioned in Section 3 of this act, whereby such applicant shall be licensed and authorized to practice medicine and surgery in this State: provided, nevertheless, that this section shall not apply to any person who shall not, at the time of the passage of this act, be an actual resident of this State, or who shall not hold a diploma from any medical college, issued prior to the passage of this act.

SECTION 14. Any person who shall, after the passage of this act, come into this State from any other State or country with the intent to practice medicine or surgery in this State, and any person who shall hold a diploma from any medical college, issued after the passage of this act, but not issued before that time, and any person not in possession of any diploma from any medical college, or any certificate of membership of one of said three medical societies aforesaid, provided, that no application for such examination shall be received from any person not in possession of a diploma from some reputable college after January first, 1881, may apply in writing to the secretary of said State Board of Medical Examiners, for an examination by said board as to his or her qualifications to practice medicine and surgery, and may thereupon present himself or herself to said board at its then next ensuing meeting, for such examination, and thereupon said board shall examine such candidate at such next ensuing stated meeting as hereinafter more particularly provided; provided, however, that every such candidate shall, prior to such examination, pay to the secretary of said board a fee of fifteen dollars. Such examination may be in whole or in part in writing, and shall be elementary and practical, and sufficiently strict to thoroughly test the qualifications of the candidate to practice medicine and surgery. And the questions propounded to, and the answers made by, such applicant shall be filed with the secretary of said State Board of Examiners. Every such candidate, upon such examination, may designate any particular school of medicine, represented in said board, in which he or she desires

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to be examined in materia medica and therapeutics, and thereupon he or she shall be examined on said branches by the member or members of said board representing such school so designated, and his or their vote upon the result of such examination shall be decisive as to such branches. If, in the opinion of at least five members of said board representing all of said three medical societies mentioned in Section 3 of this act, such candidate shall, upon such examination, be found sufficiently qualified to practice medicine and surgery, then such candidate shall be entitled to a license from said board, sealed with its seal, signed by such five or more members thereof, whereby such candidate shall be licensed and authorized to practice medicine and surgery in this State. In case any such candidate shall fail at any such examination to prove himself sufficiently qualified to entitle him to such license, he may at any time after one year next ensuing after such examination, but not earlier, apply to said board for re-examination, upon first paying to the secretary of said board a fee of five dollars; and said board shall thereupon re-examine such candidate in like manner as is above provided for the previous examination.

SECTION 15. Every person receiving such license from said State Board of Examiners shall, within thirty days after the same shall have been issued, have it recorded in the office of the register of deeds in the county in which he or she resides; and any person removing from one county to another, for the practice of his or her profession, shall have his or her license recorded in the office of the register of deeds of the county to which he or she may remove. The officers recording such license shall endorse the date of record thereon, and shall be entitled to the usual fees for making the record.

SECTION 16. The register of deeds shall keep, in a book provided for the purpose, a complete list of the licenses, provided for in this act, recorded in his office, with the date of their issue by the State Board of Medical Examiners. If such license be granted on a diploma or certificate of membership of one of said State medical societies mentioned in Section 3 of this act, he shall record the name of the medical college or State medical society conferring the same, and the date when conferred; if such license shall have been granted upon examination by said board, such fact shall be shown by the records. Such records shall be open to inspection during business hours.

SECTION 17. All the necessary expenses of said board, and the necessary expenses of its several members, herein provided for, shall be paid out of the fees for licenses and examinations, hereinbefore provided for, and out of such other funds, revenues and resources as said board may receive by donation, legislative appropriation or otherwise. Each

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member of said board shall be paid his traveling and other necessary expenses incurred while engaged in the performance of his official duties; but shall not receive any compensation for services or time spent in that behalf, provided, however, that the secretary of said board may be paid such compensation for the performance of his official duties, as said board shall see fit to provide in its by-laws.

SECTION 18. Every person who shall practice medicine in this State after the first day of January, A. D. 1881, without being thereunto duly licensed according to the provisions of this act, and who is not herein expressly exempted from the prohibitions of this act, shall be deemed guilty of a misdemeanor, and, on conviction thereof, shall be punished by a fine of not less than fifty dollars, nor more than five hundred dollars, or by imprisonment in the county jail of the proper county for a period of not less than thirty days nor more than one year, or by both such fine and imprisonment, for each and every such offense.

SECTION 19. Every person who shall, after the passage and publication of this act, with an application in his or her behalf for a license to practice medicine or surgery in this State, deposit with the secretary or any other member of the State Board of Medical Examiners, provided for in this act, a spurious or forged document, which on its face shall falsely purport to be either a diploma issued by some medical college to the person so depositing the same as aforesaid, or a certificate of membership of such person of one of the said three State medical societies mentioned in Section 3 of this act, or any genuine diploma issued by any such medical college, or any genuine certificate of membership of one of said three medical societies, which shall have been actually issued and delivered to and for the use of another, shall be deemed guilty of the crime of forgery, and, on conviction thereof, shall be punished by such fine or imprisonment, or both, as are made and provided by the statutes of this State for the crime of forgery.

SECTION 20. Every person shall be deemed to practice medicine or surgery within the meaning of this act, who shall profess publicly to be a physician or surgeon, or who shall for compensation prescribe or advise the use of medicines for the sick, or who shall, upon his or her own prescription or advice, sell and deliver to or for the sick, any drug or medicine; but nothing in this act contained shall be construed to prohibit students of medicine and surgery from prescribing under the immediate supervision of preceptors duly qualified and licensed to practice medicine and surgery in this State, or to prevent midwives from the practice of their legitimate business, or to prohibit gratuitous services in cases of emergency; and this act shall not apply to commissioned surgeons of the United States army or navy.

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SECTION 21. It shall be the duty of every member of the State Board of Medical Examiners heretofore provided for, upon being informed of any violation of this act, to make complaint thereof without delay to the district attorney of the county where such offense shall have been committed.

SECTION 22. It shall be the duty of every district attorney in this State, upon being informed of any violation of this act within his county, either by complaint made by any member of the said State Board of Medical Examiners, or otherwise, to cause the person charged with such offense to be apprehended and dealt with according to law; and in case any such district attorney shall receive from the said State Board of Medical Examiners a certified copy of the finding or determination of said board, to the effect that there is probable cause to believe that some person (naming him) has been guilty of a violation of Section 19 of this act, specifying such supposed violation, then, in that case, it shall be the duty of such district attorney forthwith to cause such person to be apprehended and dealt with according to law.

SECTION 23. All courts of record in this State, having general jurisdiction of crimes and misdemeanors under the statutes of this State, shall have jurisdiction and cognizance mentioned in this act.

SECTION 24. From and after the first day of January, A. D. 1881, no person practicing medicine or surgery in this State, within the meaning of this act, who shall not be thereunto duly licensed according to law, except those herein exempted from the prohibitions of this act, shall sue for, or recover, any claim or demand founded on any service rendered, or upon any medicines, remedies or means of cure or healing delivered, in such practice of medicine or surgery; and no such person not so duly licensed as aforesaid, shall, after the time above specified, be a competent witness as a professional expert, either in the theory or the practice of medicine or surgery, in any cause depending in any of the courts of this State.

SECTION 25. All laws in conflict with any of the provisions of this act are hereby repealed.

SECTION 26. This act shall take effect and be in force from and after its passage and publication.

The report and accompanying bill were, on motion, ordered to be published in the Transactions.

Dr. James Dorland, of the Committee on Practice, then read a paper on Infantile Paralysis, which, upon motion, was referred to the Publishing Committee.

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President: The full report of the Committee on Obstetrics has not been perfected yet. Dr. Seiler, one of the committee, is absent, but he has sent in a paper with the request that it be read. Dr. Senn has the paper in his hand, if he will be kind enough to read it.

Dr. Senn then read the paper, which was entitled "Version or Forceps, in Pelves Narrowed in the Conjugate Diameter," after which, upon motion of Dr. Marston, it was referred to the Committee on Publication.

President: The next order of business is the report from the Committee on Pathology.

Dr. Steele, of this committee, then presented a recent pathological specimen—a case of cancer of the kidney—and read a paper thereon, accompanying the reading with explanations and illustrations. The paper was referred to the Committee on Publication.

On motion of Dr. Senn, the Society adjourned to meet at 8 o'clock this evening.

EVENING SESSION, 8 o'clock.

President: The next business in order is the report from the committee on New Medical Literature.

Dr. Griffin: I stand at the head of that committee, and I shall have to ask the Society to excuse me from making any report. My time has been so occupied in other work during the year that I have not felt at liberty to devote any time to that subject.

President: Is there any report from the Committee on New Remedies?

No response.

President: Any report from the Committee on Ophthalmology?

Dr. E. W. Bartlett: I am very sorry to be obliged to ask the Society to excuse me this year. The Society met a month earlier than I anticipated, and the meeting of the Milwaukee

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County Medical Society and other matters took so much of my time, that I have not had the opportunity to prepare such a report as I should like for this Society.

Secretary: That same remark has been made by several members that this meeting of the Society is held a month earlier than they anticipated. I want to say, that the constitution, Article 2, reads: "The Society shall meet annually on the first Tuesday of May or June, as may be directed by the Secretary." The object of that option of meeting in May or June is that it may not conflict with the meeting of the American Medical Association, which, when it meets in the North, meets in the month of June, and when in the South, in the month of May. So our meeting must conform to that, and I supposed that every member understood that. The meeting of the National Society being held this year in the month of June, has made it necessary that this Society meet at this time.

President: The reports of cases and essays are now called for.

Dr. Hunt: I have an article by Dr. Meachem, Jr., on the Presentation of the Funis, with notes of ten cases. If proper, I would suggest that, the author being here, he read the report himself.

The paper was then read by Dr. Meachem, Jr., but the twenty minutes having expired before the completion of the reading, on motion, the time was extended.

On motion of Dr. Van Dusen, the paper was referred to the Committee on Publication.

Secretary: Here is a paper by Dr. Godfrey on Hemorrhoids, which the Committee on Surgery recommend be read.

The paper having been read as recommended, on motion, the same was referred to the Committee on Publication.

A Member: I would like to say a word or two in regard to the paper just read. I speak from the experience of, perhaps, half a dozen cases that I have treated with the clamp and cautery. I believe that to be the safest way to operate, and attended with the least pain, and the most effective of any way that we can remove internal piles—I mean those tumors that

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are of quite long standing, not where there has been blood leaking out in the tissue between the mucous membrane and the integument; that is a different thing altogether. Those tumors that come from the internal surface and bleed, I believe, are better treated by the clamp and cautery than by any other means that we have.

Dr. Van Dusen: A year ago I proposed to present a case of surgery, and intended at that time to ask the consent of the Society to write it out and have it go into the proceedings of last year; but on consulting with my friend, Dr. Vivian—I only saw the case with him once and assisted in the operation—I concluded that he was the one to report the case, on receiving assurances from him that he would be here this time, and I wish, therefore, to have the case reported by him, as he is perfectly competent to give its details, and I think it will be very interesting. It is a case of fracture of the skull.

Dr. Vivian: I have no paper prepared on this subject at all. I recollect the case and might orally describe it. The singularity of this case was the fact of an extensive fracture of the skull, which required an operation to remove a part of the bone, and presented the anomalous condition of there never having been any loss of consciousness at all. A child about six years old, probably, was playing near a horse, which raised its fore feet and struck the child on the side of the head, at the center of the parietal bone, so that the cork of the shoe penetrated the skull, breaking a piece about as large as a silver quarter dollar, driving it on to the dura mater; and yet, with that very extensive laceration of the scalp, the child remained conscious during the whole time. When I was called to see the case in September, to my surprise, I found a rather extensive fracture of the skull, and the broken bone attached at one end, and at the other end free, pressing on the dura mater. I immediately sent for my friend, Dr. Van Dusen, and for some chloroform, and put the child under its influence with comparatively little trouble. In elevating this broken bone it became detached, and I extracted it with two or three other

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smaller spiculæ. The child, coming from under the influence of the anæsthetic, complained of very little pain, slept well, ate well, and the whole case proceeded with comparative little trouble for the first day or two. The scalp wound healed almost by first intention, covering nearly the entire aperture in the skull. After three or four days a slight erysipelatous inflammation appeared in the wound over the aperture, and the adhesion broke away throughout the course of that part of the scalp covering the aperture, and I had for a few days an excessive discharge of pure, healthy pus. After a few days some bony spiculæ were thrown out in the discharges. During the whole of this time the child suffered very little pain, apparently being able to run about the house at all times. In about ten to twelve days—may be fourteen, I am not exactly certain now—the child seemed to be almost entirely well. There was still a very slight discharge from a very small aperture in the scalp, and I discharged the patient, as far as my visits were concerned—the patient being several miles in the country. After about three weeks the child was brought to me, and I found protruding from this small wound a piece of bone, which I seized in the forceps and extracted. It seemed to be a part of the inner table which had been exfoliated and thrown off. The wound then healed up almost immediately, and the child is to-day as well as if she never had a fractured skull. That, in short, is this case, the singularity being, with such a serious injury to the head, there was never any unconsciousness, and not one single bad symptom. It is something unusual; yet we are often very much surprised at the readiness with which injuries to the skull are overcome, and at other times equally surprised at the sudden fatality of what seemed to be a slight injury.

The President will probably recollect that I myself show a very singular case of fracture of the skull, such as few men have ever borne and lived. In fact, according to the ideas of my brethren generally, I have no right to be here talking at all; and if I hesitate a little now and then in my speech, Mr. President, you must impute it to this crack in my skull or my tongue.

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Dr. Davis: Dr. Palmer, of Janesville, being present, I would like to hear some report in regard to Burr Robbins.

A Member: I would like to ask Dr. Vivian if the bone was reproduced in that case.

Dr. Vivian: It has not as yet; no evidence of reproduction at all.

Dr. Van Dusen: Another peculiarity in this case was the force that was required to remove this portion of bone; the sharp point had evidently penetrated both membranes of the brain. No question about it. I know, in assisting the Doctor, he used a great deal of force to remove the piece of bone, and it must have been an inch and a half or two inches in length.

Dr. Vivian: Not as much as that—an inch and a half. Placing the levator under the free edge of the bone, then, as the Doctor says, it required quite a considerable force to remove it.

President: Dr. Palmer, it has been requested that you give us the history of the Burr Robbins case.

Dr. Palmer:* Burr Robbins sustained a fracture of the skull which has few parallels. His head was crushed between the timbers of a bridge and the upright boiler of a steamer, while she was steaming down Rock River at a rapid rate on the evening of Jan. 18th, 1880; the flange of the boiler of the boat coming in contact with his head just under the arch of the right eyebrow, tearing the scalp and tissue covering the skull, from a point two inches back of and just above the right eye, across the forehead immediately below the eyebrows, to a point beyond the outer angle of the left eye. The frontal bone was broken from its connections with the other bones of the head along the course of the sutures, and the bone covered with the scalp was elevated in front more than two inches, or as high as

*Note.—The following report of this remarkable case is substantially the same as that verbally given by Dr. Palmer, in response to the above invitation, but is from a manuscript history of the case subsequently furnished by him at the request of the Publication Committee, to the end that it might be correct y reported in all its details. The illustrative electrotype has also been furnished by Dr. Palmer.

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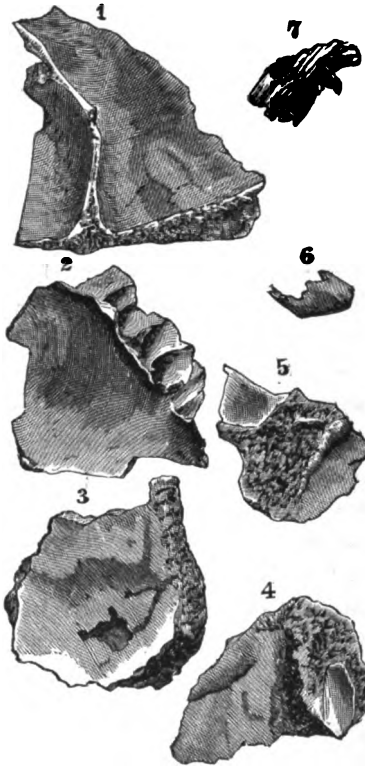
the untorn portion of the scalp and muscles, which were extended nearly to the point of laceration, would admit of its being raised. This bone could be raised and lowered like the lid of a box, the scalp along the parietal suture serving as a hinge. The anterior portion of the brain was elevated about one-half an inch, and the bones forming the orbits of both eyes and the upper part of the nose, and a portion of the right temporal bone, were crushed into fragments. Those portions of bone forming the outer angle of the right eye, the upper surface of the orbit and the floor of the skull in front, and the septum between the eyes, and the upper part of the bones of the nose, were removed. Seven of the fragments of the bone removed are here represented, normal size:



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A portion of the right temporal bone was crushed in and depressed, and fragment No. 4 was removed. The fragment No. 2, forming the upper and inner part of the orbit, was driven through the coverings of the brain and nearly buried in the brain substance, and portions of the lacerated brain oozed out when the bone was removed.

The superior maxillary bone and malar bones were separated from the other bones of the head by a fracture through the zygoma and sphenoid bones, and were displaced to the left. This fracture was more difficult to adjust, and gave rise to more suffering and inconvenience during recovery, than were experienced from his other injuries. The scalp was cut through on the posterior part of the head three and one-half inches in extent, and the left parietal bone fractured transversely an inch and a half in extent, and perpendicularly three-fourths of an inch in extent, extending upward from near the center of the transverse fracture. There was some depression of bone at the point of fracture, but not sufficient under the circumstances to require operative interference.

Some twenty minutes elapsed after Mr. Robbins' injuries before surgical assistance was rendered, and the excessive hemorrhage during the time, and the violent shock to the system from the crushing of the head, indicated an immediate fatal result.

The masses of coagulated blood, which had accumulated between the brain and elevated portion of the skull, and also under the front part of the brain, were removed, and all the bleeding vessels secured.

The fragments of the bones forming the orbit of the left eye, the upper part of the nose, and the depressed portions of the temporal bone that were not denuded of their periosteum, were placed in position as accurately as possible, and the frontal bone brought down nearly to its natural position and adjusted to them. The edges of the torn scalp were brought together with sutures, leaving an opening on the side of the head and another near the upper part of the nose, in which a drainage tube was placed,

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extending under the front part of the brain, for the purpose of allowing the blood and serum a free escape.

Owing in a great measure to Mr. Robbins possessing an unusual amount of vital vigor and will power, reaction commenced within a few hours, and within thirteen hours was well established. On the second day after the accident his head was swelled immensely, and large quantities of serum began to escape through the drainage tube. The quantity of serum poured out varied from thirteen to twenty ounces during each twenty-four hours, for seven days. He was unable to open his eyes for twenty-two days, and for seventeen days, applications of an ice cap or ice water were applied to his head unintermittingly. For three weeks he could not occupy a recumbent position, and for six weeks all his food and drink were taken through a tube, in a fluid state, as he was unable to open his mouth or use his jaws. Fragments of exfoliated bones were frequently removed through the opening left in the head, until April 3d, when the discharge ceased and the openings were closed.

During the first five weeks there were frequent wandering, delirium and hallucinations when the mind was in a passive state; but when he was fully aroused, and the will power exerted, his mental equilibrium seemed but little disturbed. While his wounds were being dressed, the pressure on the brain, made with a sponge to check the hemorrhage from the torn blood-vessels, would cause him to suddenly cease talking, and he would remain unconscious until the pressure was removed, when he would resume the subject and complete sentences that were not finished when the pressure was applied.

Mr. Robbins seems to ignore all the usual laws relating to injuries and their results, and still lives in good mental and physical condition. There is impaired vision of the right eye, and color blindness. The vision of the left eye is perfect, and he can see well with either eye separately, but in using them both at the same time objects are blurred and indistinct in consequence of destroyed parallelism.

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The hearing of the left ear is impaired, and the sense of smell obliterated.

There is much suffering and many uncomfortable feelings resulting from the injury to the nerves of the upper jaw, and the use of the teeth is quite painful. Nervous sensations are nearly lost on the forehead and upper part of the face, and there is complete closure of the lachrymal duct on the left side.

Dr. Vivian: How much of the temporal bone was removed?

Dr. Palmer: The portion of the temporal bone is about half an inch in width and three quarters in length.

Dr. Vivian: Has the frontal bone reunited?

Dr. Palmer: It has reunited along the course of the sutures perfectly. You can trace the course of the line along the sutures at the side and transversely, and on the top of the head there is quite a ridge. I expected to have some serious results follow from the sutures, but no serious inconvenience followed, except that a fragment of the bone seemed to be deep in at the right side of the head.

Dr. Vivian: Was there much purulent discharge?

Dr. Palmer: There was, for some four weeks; the discharge was constant.

Dr. Vivian: The malar bone, is that in position now?

Dr. Palmer: Yes; the malar bone is in good position. There is an opening on both sides, and there is great inability to use the upper teeth. He complains of a constant uneasy sensation and an inability to chew; the nervous sensation is impaired very much.

Dr. Vivian: There is at present no depression of any part of the bone?

Dr. Palmer: Only in the back part of the head, that is still depressed.

Dr. Vivian: That is the outer table?

Dr. Palmer: It is depressed about one-half the width of the bone.

Dr. Reynolds: Does he sleep more than usual?

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Dr. Palmer: His sleep is very good now. It has been a good deal disturbed, and he has had difficulty in getting to sleep.

Dr. Marks: Dr. Russell is here, and he has a beautiful specimen that he would like to present to the Society.

Dr. Russell: I hardly know how to present this specimen. It is a specimen of the disease of the omentum. I cannot attempt to name it very well. This specimen is a sample of it. There was an enormous distension of the abdomen. The patient complained for about three years, and had attributed it to an injury on the start; in scuffling he fell and struck his stomach on another gentleman's knees, and it was followed by vomiting of blood and inflammation, supposed to be of the bowels, and was so treated. The patient made a recovery after that, but had always trouble with the stomach apparently. He had dyspepsia, eructation of bad smelling gases, etc.; and from that time on there was a slight growing distension of the abdomen. These cysts extended entirely over the abdomen complete; but from the large amount of omentum around the hepatic and gastric region of the spleen, there were a great many more cysts there. They ranged in size from a pea up to the capacity of a tea cup. The stomach was apparently healthy, so far as I could see. He died from a gastric hemorrhage, caused by one of these cysts degenerating and ulcerating through the stomach. There were two of those ulcerating cysts; one situated under the left lobe of the liver, and the other under, and posterior to, the spleen. The one under the spleen was attached to the spleen. As to the nature of it and the cause of it, I was entirely at a loss to know; and I wish to present it more particularly to get the ideas of the gentlemen upon it. The contents of the cyst is perfectly clear, colorless fluid; it precipitates nothing by heat, but I did not test it whether it was acid or alkaline; it shows nothing under the microscope. I had the fluid examined by an expert, and found absolutely nothing in the cysts or in the water of the cysts. Those abscesses were very large—one was of the capacity of over a pint, and the other

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about a quart. There was no cyst in the liver. The hydatid theory was advanced, but there was no cyst in the liver or any other organ at all, except in this omentum. I would like to have some of you give us some theory on it.

President: If any gentleman that has examined it has any opinion we will be glad to hear it; if not we will proceed to the miscellaneous business.

Dr. Senn: I think there is some business in regard to an amendment to the constitution.

Secretary: There is an amendment that was offered by Dr. Whiting three years ago (1877) that has been kept alive till now, having been, by motion, laid on the table from year to year. The resolution is as follows:

Resolved, That no candidate for the study of medicine shall be received into the office of any member of this Society as a student in medicine until he shall have received the certificate of the President of the State University, or of some one of the Presidents of the Normal Schools of the State, that he is educationally qualified to enter upon such professional study.

Dr. Senn: I move that the resolution be laid on the table. Seconded.

Dr. J. K. Bartlett: As Dr. Whiting is not here, I think it had better be passed.

Dr. D. C. Davies offered a substitute resolution, but, on motion, after some further discussion, the whole matter was laid on the table.

Dr. Manley: For my own information, I want to inquire whether the American Medical Association have taken any steps or action in this direction with reference to controlling education. I know our worthy President—I think in 1873—advised with me about following their indications in this matter of education.

President: I cannot myself give you any information in relation to it. Perhaps some other member can.

Dr. J. K. Bartlett: I do not think anything definite ever has been done on that subject by the American Medical Associa-

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tion—no definite rule adopted, although the subject has been discussed.

President: Is there any other business under the head of miscellaneous?

Dr. Reynolds: I wish to offer a resolution, if in order at this time:

Resolved, That hereafter no banquets be had or indulged in by the members of the Wisconsin State Medical Society during the sessions of its annual meeting.

I think, Mr. President, that life is too short and too precious for us to run the risk of stuffing ourselves annually, as we have been in the habit heretofore of doing. The example and precedent is a bad one for men belonging to a scientific body. It takes up our time, it destroys our health, and in every way serves a bad purpose, rather than a good one. I am very happy to hear that the committee have arranged for no such thing this time. I hope this resolution will be adopted.

Dr. Manley: I second the resolution.

A Member: Inasmuch as no banquet has been prepared for us, it seems to me that there is no necessity for the resolution.

Dr. Senn: I hope that this resolution will be voted down, inasmuch as the committee have some suggestions to make in this regard, and I think it is proper to first listen to what they have to say.

Dr. Reynolds: I can withdraw my resolution for the purpose of hearing suggestions; but I do not want a banquet thrown into my face.

Dr. Thorndyke: The Committee on Arrangements beg leave to make some suggestions in regard to this matter. We believe that the social element of these meetings is worth cherishing, and we can get at each other's true quality quicker by sitting a little while around the supper table than by looking at each other across this room to-day. At the same time I think that the form of a banquet, as has been suggested, is rather a bore. Moreover, there are a great many members who do not take such an interest in the social meetings as to be willing to give

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time to them. The suggestion we propose to make is something of this kind: that the Committee on Arrangements be requested to get up something a little less formal; for instance, to make arrangements with some respectable restaurant for a modest, quiet meal, to which any member who chooses may attend, and that each member that does attend pay his pro rata share of the affair. I fully agree that the banquets held thus far are not desirable, and I should like to suggest something more social, and less formal.

Dr. Reynolds: I now offer my resolution for what it is worth. I believe anything we do in that line will still result in a banquet of some form or other, which will occupy our time. These social gatherings are all well enough, but at the same time, the social part of it ought to be in this room. Sitting down and gormandizing at a restaurant or hotel, and getting off some speech or toast, is not business; and it is, and always has been over done, ever since I have attended meetings of this character anywhere.

Professor Fitch: I would like to make a statement to this Society of the experience of the Illinois State Medical Society on this very subject. About thirty years ago, after having annual banquets at our meetings, there was a resolution introduced by Professor Blakey, dispensing with the banquet and with all social entertainment of that kind in the Society. This was lived up to for about ten or fifteen years. Finally, at a meeting held in Chicago some seven or eight years ago, the young men concluded that they would tender the Society an entertainment in the form of a banquet, and it remained with the Society to accept or reject the invitation. Of course they would not reject it after they were tendered this banquet, but, as it was unconstitutional and contrary to their by-laws, it could not be done in the Society, so it was done out of the Society; and we had a very enjoyable entertainment at the Grand Pacific. Then they met in the country somewhere, and had no banquet, and in about two years they came back to Chicago again, and the same thing was repeated. Now, we are to meet this year in

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Belleville, about thirty miles from St. Louis. I received the other day a programme of the proceedings, and I see that there is to be a banquet given; so that they are gradually returning to the old custom of mingling this social element with the scientific. And, as has been said by the chairman of this committee, I believe that one of the great benefits of a State Medical Society is the cultivation of the social element, and the becoming better acquainted with each other, not only scientifically but socially; and it adds very much to the interest in the Society meetings. Our State Medical Society has been conducted on that principle, and I am satisfied they will return to the habit of having some sort of an entertainment. The only reason why it was originally dropped was this: that when they met in Chicago they had a grand banquet, as their members there are very numerous, and are enabled to give a very splendid reception; and when they met in the country it was a great tax upon the profession to maintain it, and therefore it was dispensed with. Now, it is not necessary that every member of the Society should gormandize, but he can eat as much or as little as he pleases, and enjoy the social entertainment. There never was any cases of intemperance, except in eating, in the State Medical Society of Illinois; no wines or liquors were furnished at all. But I state it as my experience that our Society will within three or four years return completely to the old habit of having some sort of a social gathering; whether it will be eating, or drinking, or dancing, or singing,—there will be some sort of a social gathering to bring the members of the profession nearer together.

Dr. Van Dusen: I was honored some four, five, or six years ago by being appointed to represent the Wisconsin State Medical Society at the annual meeting of the Illinois Society. They met at Rock Island, and a banquet was got up by the ladies there. I presume there were not less than five hundred that sat at the table at one time, a good many of whom were citizens. The dinner was got up by the ladies of Rock Island; and, I must say, I never saw a happier set of men and women —for there were a large number of ladies there—and I never

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saw anything conducted in better order. I never saw an entertainment where there was that amount of good feeling expressed and enjoyed as there, not only socially, but I did not see any results from that banquet of stuffing, although there were ample opportunities. For my part, I am as much opposed to gormandizing as my friend Dr. Reynolds; it is something I myself never indulge in either at home or abroad. I do not apprehend that many members of this Society will oppose the privilege of a banquet; but I am not in favor of having a banquet that the members of a particular city or town shall get up. I think that the social part of an entertainment is certainly very productive, not only professionally, but in helping us to get better acquainted with each other. I see this year those, perhaps, that I shall not see next year; and meeting together and having these entertainments, it strikes me, will be not only pleasant but profitable.

Dr. Meachem, Jr.: It seems to me that if a resolution of that kind is passed, it makes it too positive altogether; but if left open it would be much the better way, rather than to have a positive resolution prohibiting it.

Dr. Reynolds: I notice there are those who must have a banquet, and are very much vexed if we don't have one. They seem to be in favor of having something to eat, as, for instance, a midnight supper; something that we do not recommend any of our patients to do, and yet we want to do it. If that is the condition you are in, gentlemen, have your banquet. I withdraw my motion.

Dr. Hunt: I have noticed for three or four years past, while this Society has met in Milwaukee, where we have been treated to a good supper, that each succeeding year there has been an increase in the attendance. Last year we had a very large gathering; but as it was understood this year there was to be no such entertainment, we see quite a falling off—about half as many as there were last year. To illustrate, last year we had some three, four, or five professors from Chicago, and you entertained them well; and now you see they have all left for home,

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except my friend Prof. Fitch, who, I suppose, stayed behind to have the thing resuscitated. I endorse what he has said on the subject.

Dr. Senn: I move that the suggestion offered by Dr. Thorndyke be accepted in all future intercourse of that kind.

Seconded and carried.

Dr. J. K. Bartlett: I would suggest that this banquet or social gathering—whatever it may be called—be held on an evening that won't interfere with our business, say Thursday evening, or at the end of the session, or at the beginning if you please.

Dr. Meachem, Jr.: Referring to the remarks I made a few moments ago, I should say leave it open as it is. Leave it to the Committee on Arrangements, and abide by their decision as to the entertainment to be provided at each and every meeting. I, therefore, move that the report of the committee appointed shall be abided by, by this Association whenever in session.

Seconded and carried.

President: It comes back to the original motion of the chairman of the committee. Are you ready for the question?

The same was then put and carried.

The Secretary here read a letter from Dr. Wilber, of Mineral Point, stating that he was soon to remove from the State permanently, and sending cordial greetings to the Society; and, on motion of E. W. Bartlett, Dr. Wilber's name was placed on the list of honorary members of the Society.

On motion of the Secretary, Dr. John E. Davies, Professor in the University of Wisconsin, was also made an honorary member, and was relieved from the payment of his past dues.

Secretary: There have been placed in my hands charges by one member of the Society against another member, for irregular and unprofessional conduct. I move the reference of these charges to the Committee on Ethics.

The motion was seconded and carried.

The Secretary here read his report as Secretary and Treasurer, and stated: As Secretary I have little further to report than the

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printed volume, which has been distributed to members, except to say that our membership numbered just two hundred, previous to the beginning of this meeting. The very large size of the last volume of the transactions rendered a better binding than usual necessary. The printers stated that the book would not be serviceable if bound in the usual way, and, consequently, after consultation, the Publishing Committee deemed it desirable to have them bound in the form we see them. This caused not only an increased cost in printing, but in binding and for postage.

The report of the Treasurer was read and referred to the Finance Committee, who thereupon stated that they had examined the same and found it correct as follows:

RECEIPTS.

Cash on hand at date of last report,	$194 69
Receipts for dues, 1879,	260 00
Receipts for dues since 1879,	133 00
Admission fees,	75 00
Sale of Annual Reports,	3 30
Total,	$665 99

DISBURSEMENTS.

Cash paid for stenographer's services,	$ 44 75	
Printing Transactions,	406 85	
Printing other matters,	20 20	
Postage, telegraphing, etc.,	44 72	
Stationery,	18	
Transportation and exchange,	4 75	
Secretary,	100 00	
		$621 45
Balance on hand,		$44 54

Upon motion of Dr. Fox, of Milwaukee, the report was accepted and adopted.

Upon motion of Dr. Senn, to have a committee appointed to examine the pathological specimen presented by Dr. Russell, and report upon the same, the President appointed Dr. Palmer, Dr. Fox, of Milwaukee, and Dr. Senn, as such committee.

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President: The only business now left is as to our place of meeting for next year.

Dr. Van Dusen: I have to say to my friend Dr. Reynolds, and other members of the Society, that if they will come over to Mineral Point next year, we will give them a banquet, and a very good one too.

Dr. Fox, of Madison: I suggest Madison as the next meeting place.

Seconded.

Dr. Van Dusen: I suggest Mineral Point.

Dr. Manley: I suggest Milwaukee.

Seconded.

A Member: I would like to see them meet in Madison next year, for several reasons. There are quite a number of members of this Society that I have talked with in regard to coming down here, and they said it was such a roundabout way for them to get here, and it took so long, that they would not come. It has been held here four years in succession, and this is the only time I have been able to come. Madison is as easily got at from any part of the State as Milwaukee, and seems to be more central, and I think it would be an accommodation to those living in the Western part of the State to hold it there, as a good many that cannot come here would go there.

Dr. Senn: I hope the motion will prevail as to our meeting in Madison next year. I think it is the most central place, next to Milwaukee. The profession there have always treated us well, and as it is the capital of the State, there are other pleasures to be enjoyed there, independent of the Society meeting. I think the Milwaukee delegates will be in favor of Madison.

The President then put the question on the motion to hold the meeting at Madison, and announced it as being lost, and that the vote stood equal as between Milwaukee and Madison.

Dr. Vivian: As we have not decided on any place, and as Dr. Van Dusen suggests Mineral Point, I want a vote taken on that question.

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A Member: I move a new vote. I think the majority of the members who are present are in favor of meeting at Madison. Some of us have come two hundred miles to get to Milwaukee, and a great many who cannot come here will meet us in Madison.

Dr. Hunt seconded the motion.

Thereupon a vote was taken, and, of the whole number (forty-one) cast, Milwaukee received twenty-one. Milwaukee was then adopted as being the place for the next meeting.

Dr. Meachem, Jr.: I move that every other meeting of this Society be held in the city of Milwaukee, and the intervening one be at some other town.

Dr. Reynolds: It would not do to fix more than one place of meeting. Let the Society next year attend to that.

Secretary: The constitution provides we shall meet annually at the place designated by the Society at its previous meeting. I don't think we can make a standing rule which will conflict with the constitution.

Dr. Meachem, Jr.: I move that a vote of thanks be extended to the physicians of Milwaukee, to the Committee on Arrangements, to those having charge of the Court House, and others for their kindness and generosity, etc., to this Society.

Seconded and carried.

Dr. Van Dusen: I move a vote of thanks be extended to the President for the able manner in which he has conducted and discharged his duties as president.

Seconded and carried.

President: As the table is now clear of business, it becomes my duty to make way for my successor. Before doing so, however, I must be obliged to return to you my sincere thanks for the kindness and courtesy shown me during the session.

That our Society may still grow and prosper, and that her influence for good may increase as she advances in years, and that the pleasant fraternal feeling now existing between its members may never grow less, is the ardent desire of your retiring President. I have now only to introduce to you the

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President elect. I will appoint Drs. J. K. Bartlett and Vivian to conduct him to the chair.

Dr. Ira Manley was then conducted to the chair, when Dr. Meachem, Sr., said: Gentlemen, I have the honor to introduce to you your President. [Applause.]

Dr. Manley: I need not say to you, gentlemen, that I thank you for the honor you have shown me. I did not think I should be introduced to you to-night as your President for the ensuing year, so I have not prepared any speech.

I feel under great personal obligation to this Society for the friendship they have shown me, and for the instruction I have received. I think we all feel this way. We come here to be instructed and to instruct each other in cases pertaining to our noble profession, and it has been a delight to me personally to hear what has occurred here, and see the pathological and other specimens that have been exhibited.

I trust we shall all meet another year in this place, and meet fraternally. I feel sad sometimes when I miss some of the faces that we have so long met here; some noble workers have gone from us.

I shall expect you to stand by me and help me as you have done my predecessors.

What is your further pleasure?

Dr. Van Dusen: I move that the thanks of this Society be tendered to the Secretary and Treasurer for the faithful manner in which he has performed his duties during the past year.

Seconded and carried.

President: I have in my hand the various appointments for the ensuing year, which I announce, as follows:

Arrangements—Wm. Thorndyke, D. Mason, J. K. Bartlett.
Surgery—N. Senn, K. Hoegh, H. Palmer.
Practice—D. W. Moore, Wm. Thorndyke, W. H. Borden.
Obstetrics and Gynæcology—W. H. Van Dusen, H. P. Wenzel, D. C. Davies.
Pathology—Ben C. Brett, J. H. Vivian, F. A. Marden.
New Remedies—J. G. Meachem, Jr., Wm. Hausman, John Binnie.
Ophthalmology—E. W. Bartlett, W. F. Whyte, C. Ottillie.
Ethics—J. G. Meachem, Sr., E. L. Griffin, S. L. Marston.

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Dr. J. K. Bartlett. My impression is that the Committee on Ethics are to be nominated by the President, but elected by the Society. I move that the gentlemen named by the President be elected as the Committee on Ethics.

Seconded and carried.

On motion of Dr. Meachem, Jr., the Society adjourned.

J. T. REEVE, M. D.,
Secretary,

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ART. II.—HONOR TO MEDICAL MEN.

THE ANNUAL ADDRESS, BY JOHN G. MEACHEM, SR., M. D., OF RACINE, PRESIDENT.

Members of the Wisconsin State Medical Society, and Ladies and Gentlemen:

I appear before you to-night the subject of a law. The State Medical Society expects its President to deliver an address at its annual meeting, a requirement that has been so faithfully carried out by my predecessors, that I cannot find the least shadow of excuse for a failure on my own part. I will not, however, weary your patience by my great length, for I have long since learned that a poor address, if short, may be acceptable, while a good one, if very long, may wonderfully disturb the patience of the Jobs and excite the irritability of a Moses.

The Wisconsin State Medical Society is not an institution of recent birth. It first saw light as the Medical Society of the Territory of Wisconsin in 1841, and is, consequently, one of the oldest organizations existing within our boundaries. It has faithfully and patiently labored on, always having upon its rolls the best medical talent of the State, and its influence has, therefore, been felt throughout its length and breadth. The community owes it much, for it has done much towards elevating the moral and intellectual standard of the profession within our commonwealth.

On referring to the early history of the Society, I am reminded that one of its first champions and sustainers—one who for many years maintained the first surgical reputation in the State, whose genial and gentlemanly bearing has been an example to many of his professional and other brethren—is missed from our assembly to-night; nor shall we see his manly and venerable form again during any of our future sessions, for, like a "shock of corn fully ripe," he has been gathered in by the Great Reaper. Breathe gently while I softly mention the name—E. B. Wolcott.

Drs. Myers, of Wautoma; Fischer, of Madison, and Thomas, of Darlington, members of some years' standing, have also been called to the Spirit Land.

From the title of my address, it might be supposed that I intended to give a sketch of some of the great lights in our profession from Hip-

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pocrates and Galen down to McDowell, Lister, Nelaton; and a host of other honored names, living and dead; but these have often been mentioned for our emulation, and I prefer to let them stand and shine in the brightness of their own deeds, and labors, and researches, which will never grow dim. I wish to do honor to ourselves and to our brethren as a body—a class.

The profession of medicine has held an important place in the history of the world from a very early period, and, although at first it was joined with the priesthood, it has now for many ages been a distinct profession; and I take pride in stating that, to-day, it stands in advance of all others for its usefulness, benevolence and charity. These are shown in the magnificent hospitals, asylums, homes for the aged and infirm, houses of mercy, invalid retreats, etc., etc., that have been projected by members of our profession. Sanitary reforms the world over, which have been of such inestimable advantage to the whole human family, by the prevention of disease, suffering and premature death, have almost entirely been brought about by the same agency. Warriors are praised for their deeds of valor upon the field of battle, which may have been deserved once or twice during a whole life time, but the brave doctor is daily and hourly meeting a more insidious and deadly foe than bullets and powder—a foe that is at all times unseen, but never still—scattering continually his deadly influence, and having everywhere his hidden forces at times and places culminating in small-pox, cholera, yellow fever, erysipelas, typhoid and typhus fever, malaria, and a host of others almost as destructive. The doctor has no picket guards to convey to him intelligence of the advancing enemy, and when he is summoned to duty, he goes, not knowing how, where, or in what form he is to meet the foe, and when in conflict engaged he never tries to evade the very hottest of the contest.

The history of all epidemics give examples of the constancy and faithfulness of the conscientious physician.

Out of a list of five hundred physicians in the city of New York, at the breaking out of the cholera epidemic in 1832, three only were known to have left the city from motives of personal safety; and of eighty medical students, not one left.* An honored member of our profession, and an old teacher of my own, made the first post-mortem examination of a cholera patient that year. It was in the city of Utica. All his friends—and among them one of New York's most eminent jurists—protested most earnestly against his subjecting himself to so dangerous a risk, as everybody stood aghast with terror at the rapid advance of the pestilence.

*Dr. A. Clark's Address.

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But he argued that its pathology must be studied in order to be successful in its treatment, and that if he succeeded in learning it at the sacrifice of his life, it would be offered up in a holy cause, and would be well spent.

The result of his investigations was the writing of some monographs on cholera, and the treatment instituted from the pathological knowledge so acquired, saved many lives. He lived many years after, and taught his views to a multitude of students.

Who among the old practitioners here does not remember the raging of the epidemic in Sandusky, Ohio, in 1848. It struck that city with a violence before unheard of in the United States. On the third day of July the population of that city was 5,667, and only *nine* of that number were confined to their beds by sickness. On the 23d of the same month, the mayor reports: "It is impossible to describe the desolation that withers the hearts of the strongest; the physicians are worn out by toil and more exhausting cares, and it becomes difficult to procure nurses for the sick, or burial for the dead." A few days later he again reports: "The havoc is awful, and our remaining physicians (several have died) are flying from one part of the city to another, unable to give more than a few moments to those struck down, and great numbers are doomed to die without physician or nurse." "On that sad day," says Dr. Clark, "the plague-stricken city cried aloud for help, and their cry reached the ears of those on whom the sufferer never calls in vain. In a single day help arrived, and in two days the six physicians were replaced by twenty-four, and five medical students, from different and distant parts. One impulse moved them, one courage sustained them, though they spoke the heart of the whole profession. God blessed their labors and the plague was staid."

The mayor most gratefully acknowledged the services of these true Samaritans, and in his proclamation, said: "The benefits conferred and the obligations imposed are so great, that words seem powerless to express the gratitude felt for these great, and holy, and disinterested offices of charity; for it adds not a little to the meritoriousness of their services that all compensation from town and poor was declined. Though the citizen of Sandusky cannot find words to express his gratitude, he can thank God that his lot is cast where Christian charities grow and flourish, and he can invoke God's best blessing on those who remembered him in his sore distress."

During the fever epidemic in the city of New York, there were thirty assistant physicians doing duty in the Bellevue Hospital, and of that number, twenty-one took the disease, and five died, and of the nine who escaped, three had already suffered from it in other charities.* When

*Dr. A. Clark, New York City.

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their ranks were broken by death, they were immediately filled by young, courageous and intelligent physicians, and with not a mercenary thought, as all their services were given gratuitously.

In the more recent epidemics of the South—the yellow fever—what a sacrifice was made from the ranks of our profession, especially from those that went from the North. It was almost certain death to go, but when the call was so imperious and distressing, many a conscientious man could see his duty above and beyond his own selfish nature, and with his life as it were in his hand, start on his mission of mercy, never to return. At New Orleans, Grenada, Holly Springs, Greenville, Hickman, Shreveport, and at Memphis, the physicians fought the terrible epidemic manfully, and as long as human nature could endure; but a short time only was required to thin their ranks, and take forever from sight "ONE HUNDRED of our brothers,"* and as one after another fell away, mourning and lamentation went up from hundreds and thousands of the inhabitants of those doomed cities, such as has seldom been heard since the nineteenth century came in.

At the opening of and throughout the late rebellion, with what alacrity did our profession offer up its best sons. No sooner was the call made for surgeons than the most exalted professor's chair in the country was made vacant, as well as the home of the more obscure, but not less faithful hamlet doctor, to join the army and do all in their power to heal the wounds and assuage the suffering of the gallant fellows who went to fight for the life of our nation.

Nor is the doctor ignored politically, for he is often urged and crowded into positions of responsibility and trust, from which he would gladly keep aloof, but in which the confidence that the community have in his ability to do well what he does do, places him many times beyond his own will. The inhabitants of almost every city in our State can boast of the faithful and successful administration of their doctor mayor. The halls of legislation of both state and nation have had many honorable members from the ranks of medicine. Holmes and Holland are living examples of literature and poetry within our professional fold.

At times of great mortality the community is willing to acknowledge the value of the good physician. His coming is looked forward to with an impatience almost indiscribable, and his every look and action are studied with absorbing interest. If his countenance indicates cheerfulness and animation, patients are hopeful and encouraged; a contrary appearance causes expectation to sink, and the system receives a shock, sometimes almost to the very verge of dissolution.

Dr. Singleton, Paducah.

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But there have been times and places where his services have not been so readily recognized. The true Christian physician is an angel of mercy, not only during the raging of fearful epidemics, but at times when the destroyer is less intent upon his dreadful work, and the instances of his courageous charity are as numerous as the leaves upon the trees. They are so common as hardly to be considered by the public as praiseworthy. The community has been so long receiving these generous benefactions at our hands, as to consider them as belonging to it, as a birthright, and censure and condemnation, with no stinted measure, are poured upon the head of any one of us that refuses them in the least degee. Merritt, the pedestrian, after coming out second best with Rowell, in the contest for the belt in New York, in September last, received more notice and praise from the citizens of Bridgeport, his home, than was ever bestowed upon their most self-sacrificing physician. The mayor, *three* ex-mayors, half a dozen judges, and a general, assured him by wire that he had maintained the reputation of the city and country, and promised him that Bridgeport would stand by him ! The New York Tribune says: "It is safe to say that none of these people would ever have thought to send a special telegram to a brave doctor who was risking his life to fight the yellow fever."

Dr. Rush tells us that, in a fever epidemic that raged in Philadelphia in 1793, of the thirty-five prominent physicians practicing in that city at that time, eight died, and but three escaped an attack of the disease; and that public ingratitude was never more plainly shown than at a meeting of the citizens convened at the State House, when a vote of thanks was extended to the committee who had superintended the city during the prevalence of the fever, but when a motion was made to thank the physicians for their invaluable services, not an individual was found to second the motion.

Philadelphia has changed since then, for there is not a city in the world that is doing more to honor and respect her noble army of doctors, and it is her pride to boast that no city has furnished a more distinguished list, from Dr Rush, down to the incomparable Gross.

The distress of mind that the physician experiences in his daily rounds, none can know but himself. When he is compelled to witness the inefficiency of his attempts to arrest the progress of certain diseases, and to share in the grief occasioned by such failure, and, as an eminent physician says, "When called to attend at the death-bed of a valuable head of a family, the clay-cold wrist, with the hand still warm; the half-closed or glassy eye; the heaving breast; the faltering speech; the rapid, thread-like pulse; a bed surrounded by a group of weeping children; and above all, an affectionate wife, gazing with silent anguish for the

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last time upon the partner of her life, or frantic with grief, rending the air with her shrieks, in an adjoining room; how touchingly affecting to the attending physician! It would be some alleviation to the distress occasioned by it, if it occurred only in persons or families of strangers, but the subjects of this accumulated and poignant woe are often his early and most loved friends. To receive from them the last parting look, the affectionate grasp of the hand, the half-formed expression of gratitude for unsuccessful efforts to prolong their lives—here language is unequal to the subject."

But there is another side. With what delight and satisfaction does the faithful physician witness the favorable effect of his remedies, in restoring to health from an alarming and apparently hopeless disease, the father, mother, or darling child; and though he knows that the expressions of affectionate thankfulness, heaped upon him as showers from above, are not always lasting, he feasts upon them when he can, and wonders how human nature can ever forget what his faithfulness and vigilance effected.

> "Three faces wears the doctor: when first sought,
> An angel's; and a god's, the cure half wrought;
> But when, that cure complete, he seeks his fee,
> The devil looks less terrible than he!"

The legal profession is not taxed as is ours, nor is that of the sacred ministry, though with the latter we are more or less co-partners, with our name at the head of the firm, and, consequently, from this sort of relationship existing, I have never had the conscience to charge clergymen, and for my liberality, if such it may be named, I was not long since promised an introduction to St. Peter. I proposed, however, that it be put off for the present, as I wished to see this Society through for the year before undertaking so momentous an interview! There are some excellent men among us who do charge clergymen as they do other persons, on the ground that parishes should pay their rectors a sufficient salary to render them entirely independent. This they ought to do, but it is a truth they do not, and so I have rendered my services to them as an exchange. I would receive from them their gospel, and they should take my pills in return; but I must confess right here, that in some cases, I have thought that what I was required to swallow was much the worst dose to take.

The average salary of city clergymen is not more than $600 per year, and many country parsons get no more than $400, while the calls upon them for charity are many and frequent, and they can enter no business whereby they can help themselves out in a pecuniary way. So I regard

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the opportunity to be generous to the clergyman as a privilege; and I think the same spirit is dominant with the great mass of our profession. It is quite remarkable that the greatest aid that the clergyman receives in his ministerial work, is from the doctor. He can always be relied upon as a right-hand man. If a delegate is needed to attend a convention, it is the doctor that is selected; and there is hardly a board of trustees or a vestry in the land that has not upon its list one or more members of our profession. They seem more willing to give their time to Christian work than any other class of the community, and their training seems to fit them better for it.

I was forcibly struck with the truth of this remark in looking over the list of delegates sent to attend the Diocesan Council of the Protestant Episcopal Church, which is annually held in this city. Many of the representatives are from our ranks, and not a few from this Society. It applies to other denominations as well.

The physician and the clergyman should not be separate. I do not mean that one individual should practice both professions, not by any means. They should be as distinct in that as light is from darkness; but great good can be accomplished by their mutually aiding each other.

The question is often asked me, if I think it proper to admit clergymen very much into the sick room. I answer, Yes; as a rule, eminently proper, and in most cases very desirable; for the cheering, encouraging hope that a true pastor gives the sick is often the very best tonic that can be administered, and to that person whose lamp of life we feel sure is nearly extinguished, to be deprived of the consolation which the disciple of his Master can alone give him, is a cruelty not for a moment to be thought of. To those that believe that the last offices of the priest are all important, I say aid them in procuring him, and by no means think lightly of their faith, for it is an anchor that chains fast their bark to the shores of the Beyond.

The subject of consultation is one upon which I must be permitted to say a few words; and I will ask, Do we meet in consultation over important cases as often as we should? I unhesitatingly answer, No, we do not. And why? Friends of the sick do not, as a rule, object, but, on the contrary, propose it many times when the attending physician objects. The reason (and I am sorry to say it) is the lack of confidence that exists between members of the profession practicing in the same city or locality.

There is a fear that some dishonorable conduct will occur either on one side or the other. It is in most cases groundless. That it has occurred in the experience of most physicians, cannot be denied, and, on

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account of it, the best wisdom of the profession is not always concentrated upon cases that really should claim it. In cases of alarming illness or severe accident, when there is sufficient time and opportunity for calling a second physician, I think it should be done, for no one has a right to assume the responsibility of talking and acting as though he were the embodiment of all medical and surgical knowledge, and that no suggestion of value could emanate from any head but his own. Doctors are not infallible, and, though, perhaps, the nearest perfection of any class, are not absolutely perfect. The practice of holding consultation before friends of patients and patients themselves, is not according to the code of ethics, and should never be done. Individuals outside of the profession are not expected to understand technicalities used in it, and, consequently, often get wrong ideas of what is said, and report them greatly to the injury of the attending physician. If, however, a consulting physician sees where he can greatly improve upon the treatment being pursued, it is his positive duty to firmly and clearly express his views to the one in attendance, and not by "winks and blinks" signal the friends that the recovery of the patient, if it takes place, will be due to his learned suggestions.

It is humiliating to mention these things, but they have occurred, and I doubt not in the experience of almost every medical gentleman present, who has seen five years' of practice.

Nor can I agree with the latter part of Garth's Epigram:

> "Like a port sculler, one physician plies,
> And all his art and all his skill he tries;
> But two physicians, like a pair of oars,
> Conduct you faster to the Stygian shores."

The question of a better preliminary education for medical students has been agitated now some time, and, perhaps, upon the whole, there has been a little advance in that direction, but certainly not to the extent that there should be; and I here urge upon every member of this Society to enroll the name of no person in his office, as a student, who has not fully complied with the rules of our Society, and has not, at least, a fair academic education.

A learned professor of one of our best medical colleges informed me, not long ago, that a student who had attended two full courses of lectures, and presented himself for graduation, mis-spelled over forty words in writing answers on a single sheet of foolscap. To the honor of the institution he was rejected. Nothing disgraces us so much as the admission into our ranks of half-educated men. It is this class that

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get in and get out, and fill up the columns of the irregulars, and then boast that they once belonged to the regular school of medicine, and upon this kind of deception and dishonesty go into practice, while their poor patients, it is to be feared, go prematurely to their long homes.

Dr. Joel Seavers, in a recent report of "One Thousand Deaths in the Knights of Honor," speaking of the uneducated members of the profession, gives a few instances of the certificates returned to the company of causes of death. One was "congestion of brain and falling from a building;" another was "dysphagia on account of closing of the glottis." One person died from the following "congeries and avalanche" of maladiés: Inflammation of the neck of the bladder, acute bronchitis, pleuro-pneumonia, inflammation of the left ear, nephritic trouble, and functional cerebral trouble.

Dr. Seavers thinks that originally he must have been a first-class risk, who succumbed only to this torrent of diseases.

Another died of "organic duodenum of the heart," whatever form of cardiac disease that may be.

The following is from a pension certificate that I saw only last week: The applicant had "chronic bronchitis, liver complaint, lung disease, chronic diarrhœa, nervous debility, and shortness of breath, accompanied with shaking fits and kidney disease." The poor fellow should have had a pension for living five minutes under such a complication of disorders.

It is seldom that a thoroughly educated physician leaves his first love to take up with anything but immutable truth, and shoddy and deception he has no patience with. There are other diseases in his nosology besides typhoid fever and diphtheria.

There are many persons who enter the profession too late in life; as a general rule it is a misfortune to themselves, and a greater one to the profession. Such individuals have probably failed in a variety of other callings before knocking at our doors, and, as a last resort, try physic. At this stage of their malady physic is not always successful. When a student at Bellevue Hospital College, New York, I well remember an old gentleman student, fifty years old, who was attending his first course of medical lectures. He had been an insurance agent all his life, securing risks and adjusting losses, and now he was going to make it more profitable for the company and try to lengthen the span of human life. He had more age than wisdom.

Gentlemen, a weighty responsibility rests upon each and every one of us who practice, and we should not forget that we ourselves, like our patients, are mortal.

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Wadd's ancient and humorous lines upon Dalmahoy apply as well to us as to him:

"Dalmahoy sold infusions, and lotions,
Decoctions, and gargles, and pills,
Electuaries, powders, and potions,
Spermaceti, salts, scammony, squills,

Horse-aloes, burnt-alum, agaric,
Balm, benzoin, blood-stone, and dill,
Castor, Camphor, and acid tartaric,
With specifics for every ill;

But with all his specifics in store,
Death one day did on Dalmahoy pop;
And, although he had doctors a score,
Made poor Dalmahoy shut up his shop."

We should treat all our patients as though they belonged to our own household, for, in doing so, we give them what is their rightful due. However experienced we are, the true diagnosis of a case cannot be ascertained without thorough examination, and the bestowal upon it of careful thought. The stethoscope, left in the office or carriage, aids but little in a physical examination in the house.

Many cases of incipient phrenitis have been treated as neuralgia, and pneumonia as rheumatism of the chest. We, many of us, draw our conclusions too hastily, and without sufficient examination, and, at a subsequent visit, find an array of symptoms we were hardly prepared for. More care will almost always obviate such mortification, besides giving us the satisfaction of knowing that we have done our full duty to our patients.

It is possible that we old practitioners may be in danger of becoming conceited, on the plea of experience. I remember, when I was fresh from my books, arguing some points in regard to typhoid fever with an old physician, who had *vegetated* his whole life in the town in which he was then practicing. He answered me, with a good deal of heat and asperity: "I tell you, young man, old Elihu's head is just as good authority as any."

We have scarcely any excuse for carelessness, and none whatever for ignorance. At this day and age, when schools and colleges are so numerous, and literature of all kinds so cheap and plenty, a man is a fool to be a fool. But it is not the number of books that we read that makes us wise. A few well read and studied, prove of more profit to us than many superficially and carelessly perused. Most of our standard medical works are written by men of strong minds, and thorough education, and

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cannot be read and comprehended with the facility with which we skim over a novel. Time and deep study should be given them, and even then we find on a review that there was much that escaped us at first. It is much safer to rely on standard authors than upon journalistic reports, for too often the latter are prepared by young men who have not yet covered themselves with glory in their profession, but have plenty of time to write up cases, etc., and endeavor to instruct their older brethren in matters that they have had no experience in themselves. My own Alma Mater was generous with me, for she gave me her diploma before I was twenty-one years of age, and very soon thereafter I wrote some articles for the journals, and in one of them I told my seniors how to cure epilepsy. I think I know more now than I did then, but epilepsy marches on, defiant of remedies. With the incessant cares and responsibilities of a large practice, we do not have the time that we really require for study, and therefore we cannot afford to practice the process of winnowing when the clean grain is already before us. The departments of medicine and surgery are so broken up and divided, that some of our best men give their whole time and intellect to a single limited specialty, and bring before us the very cream of the literature of their branches. To be ignorant at this day, seems almost to be a crime; but we must not expect to take in knowledge with the air we breathe, even now, for it does not come to us so easily as that. "The citadel cannot be stormed without a struggle. 'Twould be a worthless, inglorious conquest, for then the veriest fool might wear a crown, and the devoted student would be thrust into an ignominious, useless and unrewarded competition."

No great object can be gained, no great enterprise successfully accomplished, without exertion, sacrifice and assiduity. No one ever gained the highest round on the professional ladder like a bird from the air, and no one ever will. That round is only reached by efforts begun at the base.

Professional reputation is not all that we should strive for either. The physician who wishes to be held in admiration by the present generation, and to send down to posterity an honored and a glorious name, must be good, as well as great. If he is possessed of brilliant talent, and gigantic intellect, with the noble qualities of moral and holy virtue, what a magnificent structure does he present! No whitened sepulchre, all fair outside but rottenness within, nor tempting fruit which turns to ashes on the lips, nor the beautiful tiger, with glossy skin and well proportioned form, which stands ready crouched for the spring, to tear to fragments all that is lovely, pure and honorable. No; but he is God's most perfect work.

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Let us aim to be both wise and virtuous, to arm ourselves with the panoply of immortal truth, and stand forth moral giants, invincible, indomitable and undismayed; the arrows of malignity may, and will be hurled against us, but they will fall innocuous at our feet.

Let us frequent the fountain of knowledge, and drink freely of its limpid waters, but with care let us avoid that stream, which seems to emanate from the self-same source, but which contains in solution a poisonous principle, which will cause spasms of agony which tongue, pen or language cannot describe. While we cultivate the deepest learning, let us not forget to lean for support upon the ever friendly and reliable arm of piety and truth. Then shall we be rich—"rich in the lesser rewards of worldly honor, richer still in the steadfast satisfaction of our own conscience, and richest of all in the approving smile of that Great Being, whose favor is better than life, but whose frown is destruction."

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ART. III.—SUGGESTIONS ON ANTISEPTIC SURGERY.

BY DR. S. MARKS, OF MILWAUKEE, MEMBER OF THE COMMITTEE ON SURGERY.

The antiseptic system has been prominently before the profession during the past twelve years, yet there continues to be wide differences of opinion regarding the real value of antiseptics, as well as their proper method of use. The many experiments long since instituted by Lister, led him to place carbolic acid in the front rank of antiseptics, and he claimed for it great value in the treatment of wounds. He also claimed for it, the power to rob animal tissues of all irritating properties, thereby providing a ligature for haemostatic purposes, free from the objections that can be urged against silk, flax and other materials generally used for that purpose.

His experiments further led him to conclude, that when a properly carbolized animal ligature is placed around an artery in a living body, it is revitalized and becomes a part of the living organism, reinforcing the vessel at the point of application, instead of provoking ulceration, like silk and flax, and endangering secondary hemorrhage.

With such reports from one of Scotland's most eminent surgeons, it is not strange that medical men in all parts of the civilized world were stimulated to make themselves acquainted with Lister's method of treatment, and so generally has it been adopted that, at the present time, it would be difficult to find a practitioner who would be willing to acknowledge his inability to properly treat wounds antiseptically.

It seems to me, however, that many surgeons use antiseptics more from force of habit, than from any well grounded ideas regarding what they wish or expect to accomplish, and observation forces me to conclude that these remedies, invaluable in the hands of careful, judicious practitioners, are often made to do great mischief.

While it is true that some of our ablest surgeons contend that the advantages claimed for this treatment have been greatly over-estimated, and that union of wounds is often retarded, rather than hastened, through the irritating properties of the antiseptic, yet I feel confident that the majority of surgeons regard it with favor, and believe that its introduction into general use has been a great advance in surgery.

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Statistics compel us to conclude that the treatment of wounds has been more successful since than before the introduction of this system of practice, but whether the success is due more to the antiseptics themselves than to the improved method of dressing accompanying this system, we think there may be room for doubt.

We are confident that the surgeon who amputates, for instance, the thigh, under the antiseptic spray of proper strength, and secures the blood vessels with animal ligatures, applies the antiseptic gauze, in short, carries out in dressing the stump all the details recommended by Lister, is much more likely to have union by first intention, follow his operation, than the one who does not use the spray and disregards the details of dressing upon which Lister and others place so much stress.

It is not, however, always convenient or possible for practitioners, especially those in the country, to provide themselves with atomizers and other appliances necessary to carry out all the details of the antiseptic practice; and observation leads us to conclude, that, while the atomizer is a very neat and convenient means of using antiseptics, it is not indispensable to the best results in surgery, except in cases where serous cavities are opened, as in ovariotomy. We believe the manner of dressing the stump after amputation to be of vastly more importance to a successful issue, than the manner in which the limb is removed; in fact, we might add, than the use of antiseptics.

If we would have that most desirable result follow our operations, union by first intention, it is absolutely necessary that the severed tissues be brought into and secured in most perfect apposition.

After amputation, the greatest care should be taken to bring the flaps in complete apposition, and the dressing applied in such a way as to exert a gentle pressure upon them in order to prevent, so far as possible, the existence of cavities between the flaps in which blood and serum will accumulate and retard or prevent union.

During the past six or eight years we have been in the habit of using, as an antiseptic, one part of carbolic acid to seventy-five or one hundred parts of water. Our object in using this weak solution is to apply the minimum amount of antiseptic that will prevent decomposition of the blood and serum, which is thrown out upon, and remains in contact with, the living tissues after operations and accidents, remembering that antiseptics are in themselves an evil, so far as their direct influence upon the tissues are concerned, and, if applied of greater strength than we have mentioned, there will be an increased flow of serum from the cut surfaces, which will retard union.

As we stated in a paper read before this Society some years since, of all the animal tissues we have used as ligatures we much prefer the

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tendons of the deer. These tendons, after remaining in a mixture of one part of carbolic acid to five parts of olive oil, for a few months, can be stripped up into any desirable size; are strong and pliable, and the knot is not likely to loosen when tied upon a vessel. I am aware that many surgeons do not regard animal ligatures as safe, believing they are liable to soften and the knot loosen. We have secured over one hundred vessels, the largest being the femoral artery, with the above named ligature, and have never had hemorrhage follow their use.

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ART. IV.—A CONTRIBUTION TO A KNOWLEDGE OF FRACTURE OF THE RIM OF THE ACETABULUM, BASED ON THE REPORTS OF TWENTY-SEVEN CASES AND EXPERIMENTS ON THE CADAVER.

BY N. SENN, M. D., MILWAUKEE.

PROPOSITION FIRST.—Fracture of the rim of the acetabulum is an extremely rare accident, being less frequent than fractures involving the floor of the acetabulum.

PROPOSITION SECOND.—Fracture of the rim may be the result of direct or indirect violence, the force required being greater than is necessary to fracture the floor of the acetabulum.

PROPOSITION THIRD.—This injury may be completely repaired, provided the dislocation attending it is reduced early, and the head of the femur is retained for a sufficient length of time for bony union to take place.

PROPOSITION FOURTH.—Crepitus, easy reduction, and difficult retention are the most constant and reliable diagnostic symptoms.

PROPOSITION FIFTH.—The best method of reduction is to relax the untorn portion of the capsular ligament, and, by making extension, draw the head of the femur towards the broken portion of the rim.

PROPOSITION SIXTH.—The best method to prevent reluxation is to make the unbroken portion of the rim a support for the head of the femur, and to secure immobility to the hip joint, by applying a permanent dressing, including the pelvis and both lower extremities.

PROPOSITION SEVENTH.—When not a sufficient depth of the rim is left to prevent reluxation by muscular contraction, permanent extension and fixation are necessary for the maintenance of retention.

ANATOMY OF THE ACETABULUM.

The acetabulum is so called from its resemblance to an ancient vinegar cup. Primarily, three bones enter into its formation, of which the ilium occupies a little more than two-fifths, the ischium a little less than two-fifths, and the pubis the remaining fifth. It is a deep, hemispherical depression on the outer surface of the os innominatum, where the primary segments of that bone unite. In the erect position, its direction is downwards, outwards, and slightly forwards, so as to receive the head of the femur obliquely. In the dry bone, it forms between 175 and 180 degrees of a circle, but in the recent state it is deepened and con-

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stricted by a ring of fibro-cartilage, called the limbus cartilagineus acetabuli, which is firmly attached to the bony margins of the cavity.

The rim of the acetabulum, for convenience sake, may be divided into three divisions, corresponding to its original component parts. The upper, or iliac portion, has to support the whole weight of the body when in the erect position, and constitutes the strongest portion of the rim. Its line of juncture with the pubic portion in front is marked by a shallow indentation, over which passes the ileo-psoas muscle. Its posterior limitation and union with the ischiatic portion, is indicated by a ridge, which extends from the middle of the great sciatic notch to the edge of the rim, where it terminates in a slight elevation. Its anterior third is strengthened by a broad, rough ridge, which blends it with the anterior inferior spinous process, and gives attachment to a part of the capsular ligament, and one point of origin for the rectus femoris muscle.

The ischiatic portion extends from its point of junction with the preceding portion to the cotyloid notch, where it terminates in a sharp projection which partly overlaps this depression, and then turns towards the interior of the joint, and marks the boundary between the articular and non-articular portion of the joint.

The pubic portion commences near the middle of the cotyloid notch, at a point corresponding to the junction of the middle with the upper third of the external margin of the obturator foramen. It gradually ascends until it reaches its greatest height opposite the center of the horizontal portion of the pubis, where it gradually slopes backwards until it terminates at the upper depression in the rim, where it joins with the iliac portion.

We have, then, two depressions in the rim, the upper and lower. The former, marking the junction of the pubic with the iliac portion, permits more complete flexion; the latter is located at the most dependent portion of the joint, and is formed at the expense of the lower portion of the ischiatic and pubic rim.

The cotyloid notch is converted into a foramen, transmitting the vessels and nerves to the interior of the joint, by the transverse ligament which connects the ischiatic and pubic portions, and thus completes the defect in the bony part of the rim.

The interior of the cavity may be divided into articular and non-articular. The articular portion is lined with cartilage, and corresponds to the inner surface of the rim, and the adjoining part of the floor of the joint. It presents the shape of a horse shoe, with the open extremity directed downwards towards the cotyloid notch. This surface is in immediate contact with the head of the femur. The non-articular surface covers about one-third of the interior of the joint. It corresponds to the

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area enclosed by the horse shoe, and extends from above the center of the joint to the margin of the obturator foramen; it is devoid of cartilage, and is separated from the head of the femur by the transverse and round ligaments and a quantity of adipose tissue.

The deepest part of the acetabulum is near the center, where the angles of the original bones meet; here the bony wall is sufficiently thin to be translucent if held towards the light.

In most specimens the thinnest part is a little below the center, at the junction of the ischiatic with the pubic portion. It is here where perforation occasionally takes place in disease of the hip joint; it is also here where one line of fracture is usually found in stellate fractures of this bone. The absence of or imperfections in the rim determine the weakest points in the acetabulum.

Anatomy and experience teach that these points exist at the upper and lower depressions, or at the junction of the pubis with the ilium and ischium. The strongest part of the rim and cavity is the iliac, and, therefore, the least likely to become the seat of fracture.

The margin of the acetabulum is composed of cancellated tissue, covered on the inner side by cartilage, and on the outer by a very thin layer of compact tissue. At the margin the cavity is nearly circular, the diameter being the same in every direction. The measurements of 12 acetabula of adults yielded an average of $2\frac{1}{8}$ inches.

The cavity is deeper in males than in females, and in adults than in children and the aged. In children the rim is not fully developed, and in old age it atrophies. The same bones gave an average depth of $1\frac{1}{8}$ inches.

The Y shaped cartilage at the bottom of the acetabulum begins to ossify at the period of puberty.

In regard to the ligaments, I will simply say, that there are attached to the margins of the joint, the transverse, capsular, and the ligamentum teres. The transverse ligament, with the circular fibro-cartilage, completes the brim over the cotyloid notch. The capsular ligament is attached to the outer surface of a greater part of the rim, and over a considerable surface of bone at its base, as well as the transverse ligament, and includes the limbus cartilagineus, without being attached to it. Over the anterior aspect of the joint the margin is free, the ligament being attached to the bone around it, while posteriorly it reaches the edge within a few lines. It is important to remember, in this connection, the extensive insertion of this ligament, far beyond the base of the rim, and that the edge of the rim, and the fibro-cartilage have no connection with it; were the ligament inserted only into the edge of the rim, the latter would be frequently chipped off in cases of dislocation of the femur, by traction of the ligament, as often happens in some other joints.

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The ligamentum teres takes its origin from the margin of the cotyloid notch and the transverse ligament, ascends to near the middle of the joint, and is inserted into the dimple on the articular surface of the femur. This ligament takes no part in retaining the head of the femur in the joint, but, according to the experiments of Mr. Morris,* it checks rotation outward during flexion, and adduction during flexion.

EXPERIMENTS ON THE CADAVER.

These experiments were made for the purpose of ascertaining what part of the acetabulum would be most likely to be broken on the application of direct or indirect violence, and to determine the amount of force necessary to fracture its rim. The force was applied by means of a very heavy iron sledge hammer, a three-inch plank being placed over the part to which the blows were directed.

I. Subject, aet. 40, suicide. The body was well developed, the bony structure large. Force was applied to the sole of the foot, with negative result, the pelvis being fixed, and the limb in the extended position. The leg and thigh were then flexed at a right angle, the latter slightly abducted, and the force applied to the knee, the result being an oblique fracture of the femur at the junction of the middle with the lower third. The subject was then placed on the opposite side of the pelvis, and the blows directed against the great trochanter, which caused an oblique fracture of the neck of the femur, extending from within the capsule on the upper border of the neck, downwards and outwards to near the junction of the shaft with the neck; ligamentum teres, and capsular ligament, except at the point of fracture, intact.

II. Subject, aet. 47, died of phthisis. Bones well developed and strong. The body was placed on the back, knee and hip bent at a right angle, thigh slightly abducted, pelvis fixed, and the force applied over the knee. Repeated blows produced a fracture through the lower third, the fracture extending into the knee joint, half way between the condyles. A rent was found in the posterior part of the capsular ligament. The subject was then placed on the opposite side and the force applied directly over the trochanter. On examining the hip joint, the acetabulum was found to be fractured, the line of fracture extending from near the middle of the socket to the upper depression in the rim, and downwards to the cotyloid notch, the detached portion including a little more than the pubic portion of the joint. Ligamentum teres partially ruptured.

III. The subject, same as in No. II, was placed in the knee elbow position, thigh flexed at a right angle and abducted, and the force applied over the posterior aspect of the pelvis, which resulted in a fracture of the

*The Anatomy of the Joints of Man: By Henry Morris, M. A., M. B., London, F. R. C. S., Philadelphia, 1879.

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sacro-iliac junction, the fracture being at the expense of the sacrum. Hip joint not injured.

IV. Subject, aet. 35, died of phthisis. Bones large and strong. Body placed on the back, pelvis fixed, and the force applied to the sole of the foot, while the limb was slightly raised. The first blow caused a comminuted fracture of the os calcis and malleolus externus, and by subsequent blows, the tibia sustained a fracture about four inches below the knee joint. The leg and thigh were then flexed at a right angle, and the force applied to the knee, the thigh being slightly *adducted*. After many hard blows, something was felt to give way, and, on making an incision down to the hip joint, the head of the femur was found to be in the ischiatic notch, the neck being embraced by the rent in the posterior portion of the capsular ligament. Rim of the acetabulum intact. Ligamentum teres ruptured completely.

V. Same subject as in No. IV. Force applied to knee-joint, the limb being in the same position, except that the thigh was slightly *abducted*. The fracture thus produced was compound, and affected the femur at the junction of the middle with the lower third. No lesions of the acetabulum or capsular ligament.

VI. Subject, aet. 17, died of renal disease. Body was placed on the back, knee flexed at a right angle, thigh semiflexed and abducted, and pelvis fixed. A blow over the knee joint fractured the femur at the junction of the upper with the middle third, the line of fracture being nearly transverse. The body was then placed upon the abdomen and face, and while the pelvis was firmly fixed, the blows of the hammer were directed towards the posterior margin of the trochanter on the same side. On examination of the hip joint, a portion of the ischiatic rim, adjacent to the cotyloid notch, was found detached and adherent to the capsular ligament. Ligamentum teres intact.

VII. Subject same as in No. VI. The last experiment was repeated and produced the same lesions, with the exception that the fracture in the acetabulum involved its floor, the line of fracture extending from the depression in the upper part of the rim, vertically downward, to the cotyloid notch, separating the pubic portion of the acetabulum without, however, following the line of the Y cartilage. A fracture also took place through the body of the pubis, and through the ascending ramus of the ischium.

REMARKS.

These experiments demonstrate how difficult it is to fracture the rim of the acetabulum, and they tend to corroborate the views of the majority of surgeons, who consider this injury one of the rarest accidents in surgery. They are also instructive in showing where bones are most

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likely to break, when a sufficient amount of violence is brought to bear upon certain parts of the skeleton. Thus, although in every experiment the limb was placed in the most favorable position, and the force applied in such a manner as to expend itself on the inner surface of the acetabulum, fracture of the rim was produced only once, and then by forcibly rotating the femur inwards, and by applying the force to the posterior margin of the trochanter.

The rest of the fractures were distributed among different bones, as follows: Shaft of femur, 5; neck of femur, 1; malleolus externus, 1; os calcis, 1; ascending ramus of ischium, 1; body of pubis, 1; acetabulum, 2; sacro-iliac synchondrosis, 1. The head of the femur was dislocated into the great sciatic notch by flexing and adducting the thigh and applying the force to the knee, the pelvis being fixed. It is a noteworthy fact that when the femur in adults was broken, this fracture was very oblique and below the middle of the bone, while in the subject aged 17 years, the fracture was in both instances above the middle, and nearly transverse.

This limited number of experiments would lead me to the conclusion that fractures through the floor of the acetabulum are of more frequent occurrence than simple fractures of the rim, and are the result of a less degree of violence, and that the greater mortality attending them is due to the presence of visceral lesions, rather than the greater extent of injury to the bone.

REPORTS OF CASES.

Case I. Reporter, Astley Cooper.*—A man was run over by a heavily loaded wagon. On examination it was found that he had suffered a fracture of the right femur above its middle third; the left foot was dislocated outwards, and fibula fractured two inches above the ankle joint; the left thigh was rotated inwards; on making extension and rotating it outwards, a sensation was imparted to the hands, of the head of the femur gliding into the acetabulum, but as soon as the extension was discontinued, the limb assumed its former abnormal position. The patient died on the third day. At the post mortem examination, the posterior portion of the rim of the acetabulum was found detached, and another line of fracture extending into the innominate bone. The ligamentum teres was not ruptured. The head of the femur was slightly dislocated backwards, resting upon the broken edge of the acetabulum.

Case II. Reporter, Bardinet.†—A young man was thrown violently upon the ground by the upsetting of a wagon. He suffered great pain in the left hip, and could not lie on the affected side. By measurement the limb was found to be two inches shortened, foot and knee inverted,

* Emmert, Lehrbuch der Speciellen Chirurgie, Stuttgart, 1862, Band iii, s. 750.
† Locus Cit., s. 750.

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gluteal fold higher, and nates flattened; trochanter displaced backwards and upwards. Rotation was impossible, but adduction could be made without resistance. No crepitation could be felt. The head of the femur was distinctly felt under the gluteal muscles, and was affected by all movements of the thigh. The case was diagnosed as a dislocation of the femur upwards and backwards. The reduction was easily accomplished, and was attended by distinct crepitation. Re-dislocation took place three times, and the reduction was always accompanied by crepitation. It now became evident that the dislocation was complicated by a fracture of the rim of the acetabulum, consequently a permanent dressing was applied, after the fourth reduction, and retained for four weeks, when the patient was discharged, having good use of the limb.

CASE III. Reporter, Maisonneuve.*—This case demonstrates beyond all doubt the existence of this rare injury of the acetabulum, and illustrates the process of repair.

A laborer was severely injured by the caving in of the wall of a stone-quarry. A fracture of the arm was detected; the left hip joint was very tender and painful; shortening of limb three centimetres; knee flexed and foot turned inwards; great trochanter displaced backwards, and more prominent. On moving the thigh, crepitation could be distinctly felt; on making extension, the limb could be brought down to its natural length, and when held in this position, rotation, flexion and abduction could be freely made, but as soon as the extending force was removed, and especially if the limb was adducted at the same time, the shortening and deformity reappeared at once. Simultaneous with the slipping of the bone into the socket, a loud crepitation was heard.

The treatment consisted in fixing the limb in a flexed, abducted and inverted position. Twenty days after the injury was received, the patient died of pyæmia. On examining the joint after death, the head of the femur was found in the socket. The posterior and upper rim of the acetabulum had been broken into three fragments, the lowest and largest of which had formed bony union; the two upper were firmly adherent by means of fibrous union. The rupture in the posterior portion of the capsular ligament was indicated by a cicatrix two centimeters in length. The ligamentum teres was not completely ruptured.

CASE IV. Reporter, James Morton.†—The patient was a miner 18 years of age, who was injured, while at work, by a beam striking against his right hip. Three months after the accident chloroform was administered, and, on examination, the head of the femur was found dislocated upwards and backwards; a portion of the rim of the acetabulum could

* Loc. Cit., s. 750; L. Union Med., 1854, 98.

† British Med. Journ., May 27, 1871; Schmidt's Jahrbuecher, Band 152, s. 179.

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be felt just above the head of the femur. The dislocation was reduced by manipulation. The patient was discharged after six weeks, with some shortening of the limb.

CASE V. Reporter, T. Holmes.*—"I saw a case once of dorsal dislocation in which all the symptoms were strongly confirmatory of the diagnosis of fracture of the acetabulum. The dislocation was reduced without difficulty, and nothing peculiar was noticed; but, on visiting the patient next day, the surgeon was surprised to find that it had been reproduced. It was again reduced, but the reduction was found to be quite insecure, for it slipped out as easily as it was put in; and now it was thought that crepitus could be detected. The limb was put up as carefully as possible, but I believe some deformity persisted."

CASE VI. Reporter, Frederick S. Eve.†—This and the following case were reported by Dr. Eve, at the meeting of the Royal Medical and Chirurgical Society, held Jan. 13, 1880.

"A middle-aged man threw himself from an upper story window, and, in addition to fatal injuries to the head, sustained a sciatic dislocation of the right femur, which presented the usual appearances. On dissection, the head of the femur was found on a level with the lesser sciatic notch. The tendon of the obturator internus muscle crossed the upper part of the articular surface, binding the head slightly down, and thus occasioning extreme rigidity of the limb. The posterior portion of the rim of the acetabulum was torn up. Only the posterior segment of the capsule was lacerated. Of the muscles, the gemellus inferior alone was torn. After the dissection was completed, the femur was readily reduced through the cotyloid notch."

CASE VII. Reporter, Frederick S. Eve.‡—"A man, aged 55, had his left femur dislocated in the neighborhood of the great sciatic notch, by a fall of earth upon his back while he was stooping at work. The dislocation presented no unusual character. Reduction was effected by traction on the slightly flexed and adducted thigh, the ordinary manipulations having failed. He died from a rupture of the intestine. On dissection the head of the femur was found to have passed through the posterior portion of the capsule, on a level with the great sciatic notch, and apparently above the obturator internus. The posterior portion of the rim of the acetabulum was torn up as in the first case. The pyriformis, gemellus superior and obturator externus muscles were lacerated."

CASE VIII. Reporter, E. Ried.‖—A healthy laborer, aged 40, was injured in a quarry by several large stones falling upon the posterior

* T. Holmes' Surgery, 1876, p. 243.
† British Medical Journal, January 24, 1880.
‡ Loc cit.
‖ Deutsche Zeitschr. fuer Chirurgie, Band XII., Heft 1-2.

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aspect of the pelvis, the man being at work in a stooping position. The physician who was called first diagnosed dislocation of the femur, but failed to reduce it. The patient was admitted to the hospital, when the right limb presented the following appearances: It was adducted and flexed, the knee with its inner surface came in contact with the left thigh above the knee; the foot was inverted, the big toe resting on the dorsum of the opposite foot; the hip was swollen, painful and tender. On account of the swelling it was with some difficulty that the trochanter major could be felt a little higher up and farther back than when in its normal position. The head of the femur could not be felt. The shortening of the limb corresponded to the displacement of the trochanter upwards. Flexion could be effected only to a moderate extent; abduction and rotation were impossible. Chloroform was administered and reduction effected by making extension in the direction of the axis of the limb. As the head of the bone descended crepitation was heard distinctly, after which it slipped into its socket, and the limb dropped into its natural position. On flexing and rotating the limb slightly all the symptoms of the previous displacement returned. The limb was again reduced without the least difficulty, and the patient was conveyed to his bed on a stretcher. On making another examination, all the symptoms of dislocation had reappeared. It was now evident that the dislocation was complicated with a fracture of the upper and posterior rim of the acetabulum. The next day chloroform was again administered, and the limb, having been restored to its natural position, was dressed and rendered immovable by means of Hagedorn-Dzondis' apparatus. As another means of retention, a pelvic band was applied with a compress between the great trochanter and the anterior superior spinous process of the ilium. Four weeks subsequently he was allowed to sit up, and in two weeks more he was discharged, being able at the time to walk without difficulty.

CASE IX. Reporter, E. Ried.*—November 24, 1873, a young man was riding down a steep hill on a hand-cart, guiding the vehicle by the handle held between the outspread legs, his back resting against a barrel of beer behind him. While the cart was in rapid motion his right knee struck against the wheel of a heavy wagon standing by the roadside. He immediately experienced a severe pain in the right hip; the thigh was flexed and immovable. His companions attempted to straighten the limb, but were only partially successful. A physician, who was called, found the thigh shortened six centimetres, and slightly rotated inwards; leg and thigh flexed and firmly fixed, as in cases of dislocation. On account of the extensive swelling, the head of the femur could not be

* Loc. cit.

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felt. A dislocation of the femur was suspected, and reduction was attempted by making traction in the direction of the axis of the limb. This procedure diminished the amount of shortening and produced a rough crepitation, which led the physician to the belief that he had to deal with an extra capsular fracture of the neck of the femur. He applied a temporary dressing only, and sent the patient to the hospital. On admission he presented the following status: Extravasation of blood in the right knee-joint, excoriation, suggillation over the posterior spinous process of ilium; on the same side trochanter major above Nelaton's line; right leg shortened nearly two inches; femur flexed, adducted, and rotated inwards; toes directed inwards; abduction impossible; rotation, which was limited, caused crepitus; trochanter major moves in the normal circle; pelvis is inclined on the right side, so that when the limb was brought down a large hollow space appeared at the lumbar and upper pelvic region, which disappeared when the thigh was flexed at a right angle; the head of the femur could not be felt on account of the swelling. A dislocation of the femur, with fracture of the posterior rim of the acetabulum, was diagnosed. The diagnosis was based on the symptoms and the manner in which the injury was produced. Chloroform was administered and traction made, the limb being flexed and adducted; the head of the bone was lifted by a towel placed around the upper part of the thigh, and traction made outwards. The bone returned to its normal place, the reduction being attended by distinct crepitation; retention was maintained without difficulty, as the upper portion of the rim remained intact.

The patient was placed in Bonnet's wire breeches. On the 23d of December he made his first attempt at walking, and on the 16th of January he was discharged, having perfect use of the limb.

Case X. Reporter, Theodore A. McGraw.*—"I have recently had a case of fracture of the rim of the acetabulum, in which the patient recovered completely, and which I will describe in short.

Miss P——, aged 25 years, was riding on a 'buckboard,' sitting upon it with the left side towards the horse. The wagon wheel struck a stump, and she was thrown on the ground in such a way that she rested for a moment upon her knees and face. The hinder wheel struck and passed over her left hip while she was in this position. She lived at Leesville, five miles from this city, and Dr. Jones, of Leesville, was called to attend her. Recognizing the serious nature of the case, he sent for me. We put the patient under an anæsthetic. I found her left thigh dislocated on the dorsum. In that position the whole shape of the head and neck of the femur could be felt with the hand; it seemed normal in every

* Communication from Prof. Theo. A. McGraw, Detroit.

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respect, except as regards its abnormal position. The luxation was easily reduced, but its reduction caused audible and distinct crepitus. When reduced, the two extremities measured the same, and the position of the injured limb was perfect. Adduction produced redislocation with loud crepitus; reduction again caused crepitus. Fracture of the femur was excluded by the equal length and proper position of the thigh after reduction, and by the evidently normal shape of the head and neck of the femur, as ascertained before reduction, also by the ease of reduction. The ease of the redislocation on adduction, and the loud, positive and certain crepitus are my proofs of the existence of fracture.

I fastened the patient, as recommended by Bigelow, with the body on one side of the bed, and the injured extremity fastened in the position of abduction to the other side. Recovery was perfect, and in two months she was able to walk as well as ever."

CASE XI. Reporter, H. O. Walker.*—"T. S., aged 78, a street laborer, in attempting to avoid an approaching street car, was knocked down by one of the horses. He fell upon his hands and knees, with his back to the car. In this position the platform of the car struck upon the lower portion of his back, and, as the sequelæ will show, the thigh must have been at right angles with the pelvis, or nearly so, when he received the blow. The injuries received, were a severe scalp wound, a compound comminuted fracture of the forearm, with a number of contusions on different parts of the body. Aside from these there was an injury to the left hip.

He was taken to Harper Hospital and examined by Drs. G. A. Foster and M. K. Ross, who recognized a displacement of the head of the femur upon the dorsum ilii. By manipulation, they detected a distinct crepitus, but were unable to determine positively the exact nature of the fracture. Reduction was easily accomplished. The accident occurred at 4 P. M., and the patient died early next morning, evidently as the result of shock, due to the combination of injuries received. At the inquest the coroner directed me to make a post mortem examination, and I will here only make mention of that part pertaining to the injury at the hip joint. Inspection revealed the head of the femur still in position, but, on slight manipulation of the leg by flexing, and abducting the thigh, the head of the femur readily slipped out of place, accompanied by a marked and distinct crepitus. Further, there was inversion of the foot, marked adduction and flexion of the thigh, with the head of the bone distinctly felt high up on the dorsum ilii, and shortening about three inches. After several attempts it was found that reduction could best be effected by

* Fracture of the Posterior Lip of the Left Acetabulum, with Specimen. By H. O. Walker, M. D., Lecturer on Anatomy and Genito-Urinary Diseases in Detroit Med. College. "Detroit Lancet," July, 1879.

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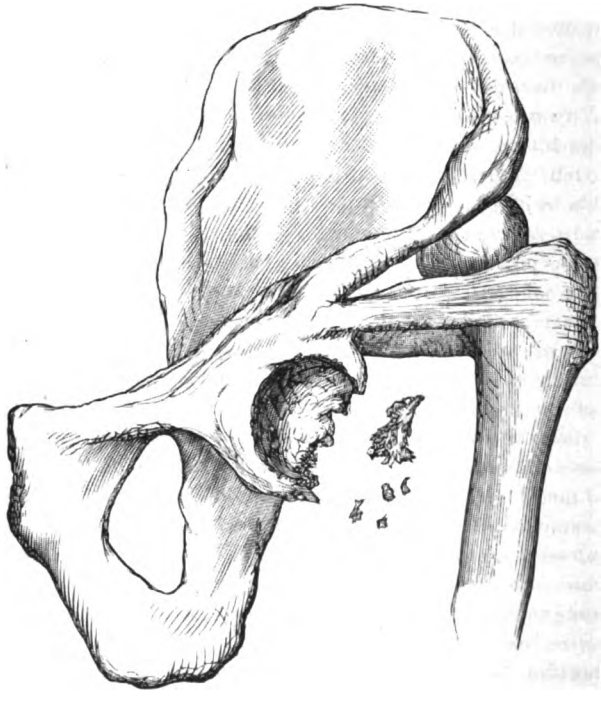
flexing, extending, adducting, and straightening the thigh. On exposing the femur and contiguous parts, it was observed that the head of the bone had been forced upwards between the wings of the ileo-femoral ligament, extending nearly up to the brim of the pelvis, midway between the anterior and posterior superior spinous processes.

The ligamentum teres, and the greater part of the posterior half of the capsular ligament, was torn away, leaving a part of the anterior portion, together with the ileo-femoral or Y ligament. The muscles of the lower gluteal region at the femoral attachment were more or less ruptured. The fracture of the rim of the acetabulum can be better appreciated by the specimen which I removed, and herewith present for your inspection.



DR. WALKER'S CASE OF FRACTURE OF RIM OF ACETABULUM.

The fragments which you see, were all detached and picked out from the cavity that had been made by the head of the femur. You will notice

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that the greater part of the posterior lip of the acetabulum is torn away, making an opening through which the head of the bone could readily escape, leaving a little less than a third of the depth of the cotyloid cavity intact, as a support to the head of the bone posteriorly."

CASE XII. Reporter, J. H. Beech.*—"On July 1, 1872, Mr. S. J. B——, a young farmer of fine proportions, sound constitution, and of good habits, aged 21 years, was upon the top of a large load of hay, driving into his barn, when he was caught by the frame-work over the door, and rolled into an irregular heap, from which his associates and himself found it impossible for them to straighten him. He stated that after he discovered that the load was too high for the doorway, and that his horses were under too strong headway to be stopped in time to save him, he endeavored to straighten himself as flat as possible upon his back, but that his 'left knee was caught,' with the result as above stated, and that he felt a crushing, as if he was being torn in pieces. It was probably less than an hour before I was at his side, and found all the evidences required for a diagnosis of dislocation of the left 'caput femoris,' upon the dorsum ilii. * * * * * *

Attempts to rotate the limb outwards caused great pain. No crepitus could be felt. Placing the patient upon a hard, level bed, and inducing anæsthesia by chloroform, we proceeded to flex the knee, carrying it at the same time across the right limb and keeping the heel well everted; when the knee was opposite the right hip, a little pressure toward the body was begun, and continued with slightly stronger eversion of the heel, until the knee was brought closely over and nearly past the umbilicus, when the forcible eversion of the heel was discontinued, the knee carried outward to a line with the left axilla, at which time a sensation as of gentle sliding of the caput femoris was felt, and the foot was immediately brought down to the side of its fellow, with the leg, knee and thigh in its proper relation to those parts of the limb. There was no doubt in my mind that I had reduced an outward and backward dislocation of the left caput femoris, by what is called Dr. Reed's method, although there had been no audible snap, nor sudden motion, as I had felt in former cases. We now bound the patient's knees and legs together by a wide, strong towel, reaching from above the patella to the malleoli. Anodynes were ordered to be given if he suffered much pain, or if the supine position became irksome for endurance. On the following day my surprise was great to find the injured limb one and one-half inches shorter than its fellow, and slight but not fixed eversion of the toes, all other positions being as we left them. The patient had not complained

* Toledo Medical and Surgical Journal, April, 1877.

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of much pain, and had not been known to move the hips or lower limbs, nor had he been aware of the shortening.

Recalling to mind the quiet manner in which the final moves in my efforts at reduction had been effected on the previous day, I suspected fracture of the acetabulum, and, upon mature reflection, could but negative any other supposition of error. Seating myself at the foot of the bed, in good position for protracted traction, I seized the heel and instep and commenced gentle extension, charging the patient to avoid 'muscular resistence, and found him a model of courage, resignation, and confidence. After a moment of involuntary contraction, against which I did not apply additional force, I could feel a yielding to my effort, and in less than ten minutes the normal length of the limb was restored. The patient stated that 'the stretching made it more comfortable' Transferring my grip to other hands, I carefully examined the cresta ilii, and found them relatively correct.

Having informed my patient and his attendant friends of what seemed to be the new revelation, we proceeded to the *experimentum crucis*, to wit: Having the extension gradually relaxed, watched, with my hands pressed over the trochanter major of either side, for tactile sensations, I believed, but was not sure, that I felt crepitus. The retraction was extremely slow, and it was about twenty minutes before the patella appeared, an inch above its fellow Again traction was made by an assistant, and I felt the same individual crepitus, or, more properly, friction, in its progress. The patient said that "it hurt a little, in one spot." We now attached a weight of five pounds by a cord running over the roll at the foot of the bedstead, which we caused to be elevated two bricks' thickness, and kept the patient *secundum artem*, for six weeks, with the usual minor details and modifications. After this period, he was careful in resuming the erect position, bearing no weight upon the foot for about one month longer, and finally resuming the use of the limb as far as practicable, which is to-day far from perfect."

Dr. Beech examined the patient four years after the injury, and found that he had to wear about one inch additional thickness under the heel of the injured limb, and that, even with this contrivance, he walked with a decided halt. The foot could be inverted or everted, but when the whole weight of the body rested upon it, it was slightly everted. Immediately above the acetabulum a hard substance could be found, which was supposed to be provisional callus.

CASE XIII. Reporter, Julius F. Miner.*—This, in every respect a remarkable case, is the only one I have been able to find where the rim

* Buffalo Medical and Surgical Journal, Vol. V., p. 383.

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of the acetabulum was fractured by a gun-shot wound without producing a more extensive fracture of the joint. Prof. Miner very kindly sent me a photograph of the patient for inspection, which accurately shows the position of the limb after recovery.

"Lieut. Col. James Strong, of the Thirty-Eighth New York Volunteers, now Brigadier General of the Veteran Reserve Corps, was wounded May 5, 1862, at the battle of Williamsburg, Va. The ball entered a little below the anterior superior spinous process of the ilium, and made its exit near the outer margin of the sacrum. The ball passed deeply, and fractured, in its course, the rim of the acetabulum, which was removed, an inch and a half in length, and of a diameter sufficient to show that the whole upper rim had been carried away. This fragment of bone was removed from the wound at the dressing made in the hospital, where he was carried after having lain on the field for some hours. Surgeon N. J. Berry first dressed the wound and removed fragments of bone and portions of pants and drawers. The wound was very large, and a thorough examination could be made by the easy passage of the finger."

For the purpose of giving the patient the best possible chance to recover, he was removed to his home in Buffalo, where he was placed under the care of Prof. Miner. * * * * * "The leg was partly flexed upon the thigh, and the thigh upon the body, the whole drawn internally to a considerable extent. In this position it was fixed; it could not be moved in the slightest degree without producing pain, which was absolutely unendurable."

"The constitutional disturbance at length became very great, and the question of life, rather than the position of the leg, engrossed all attention. Fragments of clothing and spiculæ of bone were at various times extracted or washed from the wound, while great quantities of pus constantly issued. * * * * * In this condition of extreme distress and uncertainty of life, he continued without great change for eight or ten weeks, when he gradually and very slowly commenced to improve, both in his general condition and in the appearance of the wound, until, after a few weeks more, he could be moved from one side of the bed to the other, and his comfort promoted by change of position. When at length it became evident that his recovery was probable, the question of the condition of the leg was again agitated, and efforts were early made to extend it and obtain motion in the knee joint. Extension and counter extension under the influence of chloroform was adopted, and persevering efforts made to obtain as favorable results as possible. Nothing, however, can be said to have obtained greater motion in the knee-joint, the hip being made neither better nor worse. Abcesses occasionally formed in the site of the old wound, and continued to

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do so for eighteen months or two years, each time indicating great constitutional disturbance, sometimes so great as to excite fears of his life."

When recovery finally took place, the following was his condition: "The thigh is shortened nearly five inches, the head of the femur rests upon the ilium above the acetabulum, and a complete and bony anchylosis exists; the knee is drawn inwards, and has good motion. The weight of the body can be borne upon the leg with comfort, and the twisting of the pelvis and the extension of the toes compensates for the shortening and stiffening, in a wonderful degree, so that he walks with or without a cane, with but slight disability, considering the severity of the injury and the unnatural condition of the articulation." * * *

"A gun-shot wound, such as related, carrying away the rim of the acetabulum and allowing the muscular contraction to dislocate the femur, drawing the head upwards and backwards, must be a very severe and dangerous injury. If such cases have occurred, they have more generally died from either shock, hemorrhage, or inflammatory action and traumatic fever, within a few days—have rarely continued under observation long enough to accurately determine their nature, or the results of imperfect recovery."

CASE XIV. Reporter, J. H. Pooley.*—This case is reported by Prof. Pooley, more for the purpose of showing the utility of the fulcrum in reduction of dislocation of the hip, as advised by Dr. Sutton, than with any special reference to the fracture under consideration, but as both Dr. Dunlap and the reporter considered the existence of the fracture an *obstacle* to the reduction, I will report it in this connection.

"October 19, 1876, I was requested by Dr. Dunlap, of Springfield, Ohio, to see, in consultation with him, a case of dislocation of the hip, in which he had failed to effect reduction after a fair and repeated trial of the ordinary method of manipulation.

"The patient, the wife of a farmer residing near Catawba, Clark County, Ohio, about fifteen miles from Springfield, had been thrown from a wagon the day before, about four o'clock in the afternoon, and had sustained a dislocation of the hip. She had been first seen by Dr. John Clark, of Mechanicsburg, who had been unsuccessful in his attempt at reduction.

"Dr. Dunlap had then been sent for, and had made repeated attempts to reduce the hip, but also without success. All the attempts had been manipulation. Pulleys had not been used. I arrived at the house on the next day, early in the morning. I found the patient, a spare, nervous

* American Practitioner, December, 1876.

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woman of thirty-three, in bed, suffering considerably from pain, and severely from nausea, the result of chloroform which had been administered on several occasions.

"The left limb was an inch and a half shorter than its fellow, the foot very slightly everted, and the head of the bone could be plainly felt in front of the ilium, just above the acetabulum. Dr. Dunlap informed me that the dislocation had been primarily on the dorsum ilii, and the present position of the head of the femur was the result of the last manipulation. It had been found, on manipulating it, to be extraordinarily movable, and had been carried once or twice into the thyroid foramen, and also up on the ilium just above the acetabulum, in which situation I found it. In fact it would go almost anywhere, except into the right place. Dr. Dunlap said that he had carried it right across the acetabulum on two occasions, and, as he did so, he felt a distinct crushing crepitus, but it went over and not in. His belief, which I presume was correct, was that a portion of the lip of the acetabulum was broken off, and, as the head of the thigh bone was brought up against this broken portion, it was forced before it, and, partially filling up the acetabulum, prevented it from going in, and guided it over to the other side instead. I directed, according to Dr. Sutton's plan, a firm cylinder to be made, by tightly and evenly rolling two sheets, which was three inches in diameter and about two feet in length; it was firmly tied round with narrow strips of bandage to prevent its unrolling. The patient was now anæsthetized and laid upon the floor; the cylinder was now placed across the upper part of the thigh in the groin, and firmly held at each end by an assistant; over this, as a fulcrum, Dr. Dunlap made the manipulation, while I attempted to follow the excursion of the bone with my fingers. The two first attempts failed, as I very plainly saw, from not fully carrying out the principle involved in the use of the fulcrum; that is, by abducting the knee before complete flexion of the thigh over the cylinder had been accomplished. The first time the head of the femur lodged in the thyroid foramen, the second time at the top of the ilium, where it was when we began; it had skipped round the base of the acetabulum without rising to its level, much less going into it. The third trial, in which the principle of the fulcrum was deliberately and thoroughly carried out, was perfectly and speedily successful. The thigh was slowly and fully flexed on to the abdomen over the fulcrum, the head of the bone was lifted up to a level with the acetabulum, and when the knee was abducted, and the motion of bringing the thigh down barely commenced, it slipped in with a distinct snap; the limb was found to be restored in length and position and the dislocation was reduced. A broad, firm, pelvic bandage was applied, and the patient returned to bed.

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"This may almost be looked upon as a test case for the new method. Ordinary manipulation had been tried by skillful hands, in which it had never before failed; and I think that there can be but little doubt that Dr. Dunlap's explanation of his failure was the correct one. What was wanted there was some means by which the head of the femur could be carried up to a level with the top of the acetabulum, and thus prevented from pushing the broken acetabular rim before it. This was found in Dr. Sutton's method; the obstacle was overcome and the reduction accomplished."

CASE XV. Reporter, Frank H. Hamilton.*—"February 3, 1847, a strong German laborer was crushed under a mass of iron weighing several tons. Drs. Sprague and Loomis, of Buffalo, were called, and found the left thigh dislocated upwards and backwards, and, by the aid of six men, they succeeded in reducing it, the reduction being attended, as the gentlemen have informed me, with a slight sensation of crepitus. The legs were then laid beside each other, and the knees tied together, the patient lying on his back, and now the two limbs appeared to be of the same length. On the second and third days the injured limb was examined by the same gentlemen, and there was no displacement; on the fourth day I was invited to meet these gentlemen, the patient having had muscular spasms during the previous night, and the thigh being reluxated. I found the limb shortened one inch and a half, adducted, and the toes turned in. We immediately applied the pulleys, and soon drew the trochanter down to a point apparently opposite the acetabulum, and a careful measurement showed that the two limbs were of the same length. The pulleys being removed, the leg did not draw up again nor did the foot turn in, yet we had felt no sensation to indicate that the bone had slipped into its socket, nor had we felt crepitus. The legs and thighs were now laid over a double inclined plane and well secured. He remained in this condition for three days more, during which time Dr. Sprague saw him each day and found nothing disarranged. On the night of the seventh day the spasms returned, and in the morning the thigh was displaced. The next day we again applied the pulleys, but soon found that the bone would not remain in place one minute after the pulleys were removed. At this time, while moderate extension was being made at the foot, by rotating the foot inwards, we could distinctly feel a slight crepitus. A straight splint was applied and as much extension made as he could conveniently bear, and in this condition the limb was kept several weeks. Seven years after I found the thigh still displaced upon the dorsum ilii; he limped badly, but he could walk fast and perform as much labor as before the accident."

* A Practical Treatise on Fractures and Dislocations. By Frank H. Hamilton, A. M., M. D., L L. D. Philadelphia, 1871.

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CASE XVI. Reporter, Mr. Keate.*—This case is interesting from the fact that the lower portion of the rim was fractured and the femur dislocated downwards. The head of the femur could be felt lying against the tuber ischii, and a distinct grating of the broken off cartilaginous rim could be felt. The posterior and upper part of the rim being complete, there was no trouble in keeping the bone in its position after reduction had been accomplished.

CASE XVII. Reporter, Dr. McTyer.†—A man, aged 27 years, was injured by a number of bricks falling upon his back, his right knee being placed on the bank of a trench. His right leg was found shortened about an inch and a half, flexed, and the foot a little everted. Motion of the limb was not much impaired, but was attended by great pain and crepitus. On making extension the limb was easily brought to the same length with the other, but it became shortened again immediately when the extension was discontinued; the symptoms resembling fracture of the neck of the femur.

The usual treatment for such cases was pursued. Subsequently the toes became slightly turned in, but this circumstance was not regarded as sufficient evidence to justify a change in the diagnosis. In a few days the patient died from his injuries. On dissection, about one inch and a half of the upper and posterior portion of the rim was found completely detached and held in place by a portion of the capsular ligament; the bottom of the acetabulum was also fractured. The head of the bone could be easily dislocated upon the dorsum ilii, the fragment of the acetabular margin being moved aside and swinging upon its fibrous attachment as upon a hinge, but resuming its place again perfectly when the head of the femur was restored to the socket The femur was not broken.

CASE XVIII. Reporter, Dr. McTyer.‡—"In this case the limb was found shortened, the knee slightly bent and turned a little forwards and inwards, and the toes pointing to the tarsus of the other foot. It was thought to be a fracture also of the neck of the femur, but the autopsy disclosed only a fracture of the upper margin of the rim of the acetabulum."

CASE XIX. Reporter, Dr. McTyer.‖—In this case, seen only after death, the limb was not shortened much, but the toes were stretched downwards, and turned slightly inwards. It was supposed at first to be simple dislocation, but on dissection, the posterior and inferior margin of

* Ibid., and American Journal of Med. Sciences. Vol. XVI., p. 225.
† Ibid., and Glasgow Medical Journal, February, 1880.
‡ Ibid.
‖ Ibid.

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the acetabulum was found to be broken, and displaced towards the coccyx, while the head of the femur rested upon the pyriformis muscle, over the ischiatic notch.

CASE XX. Reporter, Dr. McTyer.*—This case came under observation in the dissection room. A fragment of the superior and posterior margin of the acetabulum had been broken off, and had reunited, slightly displaced.

CASE XXI. Reporter, W. L. Faxon.†—Mrs. Faxon, aged thirty-five, wife of the reporter, was thrown from a buggy while driving, Oct. 1st, 1877. When taken up, there were symptoms of dislocation or fracture of the right femur. Examination proved the existence of a fracture of the lip of the right acetabulum, and dislocation of the head of the femur upwards and backwards, with about four (4) inches shortening. The fracture was so near the floor of the acetabulum that there was no sensation of the head of the femur being lifted in its passage over the broken edge of the socket. Drs. John H. Gilbert, of Quincy, and Samuel Cabot, of Boston, assisted the husband of the patient, and confirmed the diagnosis. Desault's splint was applied, but the patient's condition—she being five months pregnant, and suffering from constant vomiting from the time she was injured—necessitated its removal. Her husband then constructed a bed, of which a lengthy description is given, the most important features, however, being the use of sand-bags for the purpose of keeping the limb quiet and making gentle extension and counter-extension. The pain and vomiting ceased after this dressing was applied. On January 4, 1878, she was delivered of a healthy child. One year from the time of injury, she was able to walk, and the prospects were favorable towards a complete recovery.

CASE XXII. Reported by John Eric Erichsen.‡—This case came under Mr. Erichsen's observation at the University College Hospital. The patient was a strong, muscular man, about 30 years of age. It is not stated how the injury was produced. The limb was shortened, inverted, and the head of the femur could be felt in the sciatic notch. Reduction was easily effected by extension, and was attended with distinct crepitus, but as soon as extension was discontinued, the head of the bone slipped back to its former locality.

CASE XXIII. Reporter, D. Hayes Agnew.‖—"In a case of this injury recently under my care, in a very prominent citizen of Philadelphia,

* Ibid.

† The Boston Medical and Surgical Journal, Feb. 20, 1879.

‡ The Science and Art of Surgery, by John Eric Erichsen, Philadelphia, 1873. Vol. I, page 364.

‖ The Principles and Practice of Surgery, by D. Hayes Agnew, M. D., LL.D., Philadelphia, 1878, Vol. I, page 929, and communication from the author.

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there was no shortening of the limb, although the most careful measurements were made. Pressure over the body of the pubis caused no pain, and the patient was able to sit up and ride a distance of nearly two miles to his home after the accident. He was able to raise the limb, and to flex the leg upon the thigh, and the thigh upon the abdomen; he could invert and evert the toes; there was no crepitus like that of fracture, and he had entire command over the bladder. The only movement that caused him pain was the attempt to turn upon the side, and this occasioned violent muscular spasms. When the thigh was flexed upon the pelvis, and then rotated, the arc of the circle described was uniform up to a certain point, but beyond that, the head of the bone appeared to slip. On the strength of this peculiar symptom, a fracture of the lip of the cotyloid cavity was suspected, and the treatment adopted accordingly. A subsequent autopsy not only proved that this was the case, but also revealed a fracture of the floor of the acetabulum, through which the finger could be thrust from the pelvic side."

CASE XXIV. Reporter, James Dorland.*—Dr. Dorland informs me that while on a visit to his former home in Canada, he was called to see Mrs. J——, aged 25 years, who had suffered an injury of the left hip joint three years before. At that time she was three months pregnant, and, while walking on the wet floor, slipped and fell heavily on the left side. In the evening a physician was called, who diagnosed a dislocation of the femur upwards and backwards, and proceeded to reduce it. This was done without any difficulty, but the bone would not remain in place. The reduction was attended with crepitus, and the head of the femur could be distinctly felt when out of place. The bone was reduced on four different occasions, but reluxation followed every time, in spite of all measures employed to keep it in place. She was kept in bed for four weeks, and for five months subsequently she managed to move from one place to another by means of a chair. The delivery took place at full time, and was not attended by any special difficulties. When Dr. Dorland examined her, the limb was shortened two inches, and the toes turned inwards. She walked quite lame, but without the aid of either cane or crutches.

CASE XXV. Reporter, N. Senn.†—J. D——, aet. 22, a strong, muscular man, was injured May 1, 1872, while pushing a hand car before him; another car, coming from behind with greater speed, knocked him down. He first fell on his knee, and then received the principal blow upon the posterior and left aspect of the pelvis, just above the great trochanter.

*Personal Communication by Dr. James Dorland, Milwaukee, Wis.

†Three Cases of Rare Dislocation, by N. Senn, M. D., Milwaukee, Wis. The Medical Examiner, Jan., 1873.

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The patient immediately experienced great pain in the left hip, and was unable to walk. The physician who was called diagnosed a dorsal dislocation of the femur, which he reduced very easily by slight manipulation. He saw the patient several times afterwards, and expressed himself as satisfied with the progress of the case.

For a number of days the pain continued to be severe, but gradually subsided. In a few weeks he attempted to walk, but found it impossible to rest the weight of the body on the afflicted limb. Two months after the accident he applied to me for treatment. I found the thigh flexed upon the pelvis, the knee and foot turned inwards, and the limb shortened two inches; the head of the femur could be distinctly felt upon the dorsum ilii, and responded to all movements of the thigh. Mobility very slight. The patient being desirous that at least a faithful attempt should be made to reduce the dislocation, I called Drs. Löhr and Lueck to render assistance. The patient was placed profoundly under the influence of ether. The adhesions were ruptured, and Reed's manipulation repeated several times without accomplishing the desired object. Extension and counter-extension were now made by a number of assistants, with the result of lengthening the limb nearly, but not quite, to its normal length. The patient was then placed in bed, and permanent extension applied by means of a weight and pulley. One week subsequently we again placed the patient under the influence of ether, and made extension with the pulley, the thigh being adducted and rotated inwards, proper counter-extension being made at the same time. After using considerable force, the head of the femur advanced with an ill-defined sensation of crepitation, to a point opposite the acetabulum. While an assistant continued the extension, the limb was brought down to its natural position, and, on accurate measurement, was found to be of normal length.

The upper margin of the great trochanter was found to correspond to Nelaton's line. While held in this position, rotation, abduction, adduction and flexion could be made with ease, but as soon as traction was suspended, and especially if the thigh was adducted at the same time, the head of the femur slipped back upon the dorsum ilii, accompanied by the same rough, grating sound as it left the socket, as was heard and felt during reduction. I could distinctly feel the head of the femur glide over the smooth surface of the acetabulum, and, as traction ceased, it appeared to rise a little and pass over a rough edge, and then, without any further obstacle, it receded to its former abnormal position. We repeated this experiment several times with the same result. We were now satisfied that there existed with the dislocation, a fracture of the upper and posterior portion of the rim of the acetabulum. After bring-

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ing the limb into its natural position, we applied extension by weight and pulley; at the same time we aimed to press the head of the femur against the floor of the acetabulum, by applying a broad, pelvic band. It was found impossible to keep the bone in place, and after three weeks' persistent efforts, all further attempts were abandoned, the former deformity having gradually returned.

CASE XXVI. Reporter, H. J. Bigelow.*—This case occurred at the Massachusetts General Hospital, under the care of Dr. Gay.

"The patient, aged 36, a robust and healthy man, fell from the roof of a building, striking upon the right hip. In the recumbent position, the leg was shortened and inverted, the toes crossing the opposite instep. Being etherized, the thigh could be flexed at a right angle with the abdomen, there being crepitus in the region of the neck of the femur. The limb, when drawn down, was still shortened half an inch. The patient having died of other injuries, the autopsy showed the head of the bone partially dislocated backwards and resting upon the posterior fractured edge of the socket, the whole posterior wall of the socket having been broken away in a mass. The detached fragment measured one and a half inches square. The posterior surface of the head of the bone was deeply indented by the fractured edge of the acetabulum, against which it had impinged after displacing the portion broken off. A transverse crack extended through the acetabulum from the upper sciatic notch to the foramen ovale. The position of the limb in this case did not differ from that in the usual partial dislocation behind the tendon, and was determined by the same mechanism."

CASE XXVII. Reporter, M. Richet.†—"The patient, 58 years of age, was caught by a revolving belt The right limb was shortened a quarter of an inch, and so far everted and straight that the internal condyle of the left femur lay in the popliteal space of the injured one; the right groin was filled up; towards its middle, and outside the femoral artery, was a hard, resisting and obscurely spherical tumor, masked by the glands and swollen tissues. Flexion with outward rotation and local downward pressure failed to reduce the luxation; but, on a third trial, flexion and downward pressure during slight abduction, instead of outward rotation, succeeded. Seven months afterwards the death of the patient having occurred from another cause, a post-mortem examination showed a united fracture of the socket, comprising the external and anterior third of the rim with the two anterior spinous processes of the ilium."

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*The Mechanism of Dislocation and Fracture of the Hip, by H. J. Bigelow, M. D., Philadelphia, 1869.

† Ibid., and M. Berand, Bulletin de la Soc. de Chirurg., 1862. Tom. III., p. 185.

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CAUSES.

The older works on surgery mention direct and great violence as the only cause of fracture of the acetabulum; indeed, until recently, it has been considered impossible for a fracture of the rim to take place without more extensive injury to the ilium. When the rim is broken by direct application of force, it is usually the result of a severe fall or blow upon the great trochanter or pelvis; or the producing cause may be still more direct, as when a bullet in its course chips away the brim, as was the case in the very interesting and, to my knowledge, unique case reported by Prof. Miner. When the force is applied over the center of the great trochanter, in the direction of the axis of the neck of the femur, the head of the bone is driven directly against the socket, and a stellate or perforating fracture of the acetabulum is the result; but if the force is applied in such a manner that it first rotates the femur outwards or inwards, then one margin of the acetabulum acts as a fulcrum to the neck, and the head is forced against the opposite side, and a linear fracture through the acetabulum (experiment No. VI), or fracture of the rim (experiment No. VII) may take place. In such cases, the traction of the capsular ligament may assist the head of the femur in producing the fracture of the rim, but without additional assistance such traction is not sufficient to produce the injury. When the force is applied to the posterior part of the pelvis, as was done in Cases III, VII, VIII, XI, XVII, and XXII, the pelvis becomes the movable point, and the foot, if the leg is extended, or more frequently the knee, becomes the fixed point and furnishes the necessary amount of resistance.

At the moment the injury is received, it is essential for the thigh to be *abducted*, as adduction would favor a dislocation by the head of the femur gliding over the inclined plane of the internal surface of the acetabulum (Experiment No. IV.) The pelvis may be the fixed point, as in case IX, and the force transmitted through the femur by blows or falls upon the knee. In most of these cases the thigh was more or less flexed at the time of injury, hence, in the majority of cases, the upper and posterior segment of the rim was fractured, and the head of the femur dislocated into the upper sciatic notch, or upon the dorsum ilii.

Of the twenty-seven cases, eighteen were males, four females, and in the remaining five the sex is not stated. The disproportion between the males and females is explained by the fact that the former are more frequently exposed to severe accidents. The same may be said in regard to age. The extremes of the ages were eighteen and seventy-eight years, so that most of these cases occurred during the time of life when most exposed to grave injuries. It is also well to remember that in young individuals, dislocation and diastasis occur in preference to fracture,

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while in the aged, the altered position of the neck of the femur as well as the increased fragility of its substance, are potent predisposing causes of fracture of the neck of the femur.

SYMPTOMS.

The symptoms presented by a case of fracture of the rim of the acetabulum are those of dislocation and fracture combined, the symptoms of the former resemble ordinary dislocation, while the latter are directly referable to the broken bone itself. A certain degree of displacement of the head of the femur was present in all cases where a diagnosis was made during life. Benjamin Travers* believed that in some cases of fracture of the rim of the acetabulum, the displacement takes place gradually some time after the injury has been received, but it is more probable that these were cases known and described by Hueter† as inflammatory dilatation of the acetabulum, the interstitial absorption of the margin of the cavity permitting the head of the femur to glide upwards and backwards. In twenty-four cases the direction of the dislocation is mentioned, of which in fifteen the head of the femur was dislocated upwards and backwards, in four into the great sciatic notch, in two directly backwards, in two downwards, and in one case forwards. It will be seen, then, that in a large majority of cases, that portion of the rim is fractured which is in the direction of the usual form of dislocation, so that the same injury which produces a dislocation may also cause a fracture, provided it is sufficient in intensity and the limb *abducted* at the time the injury is sustained.

The amount of shortening corresponds to the distance the head of the femur recedes from the socket. In Agnew's case, no shortening could be detected on careful measurement. In all of the other cases, where mention is made of this symptom, it was present, but varied in degree from one-fourth of an inch to four inches. If the head of the femur has left the socket, the position of the limb is the same as in simple dislocation, the direction being determined by the form of dislocation.

Flexion to a greater or less extent was present in all cases where reference is made to this subject. Inversion of the foot and rotation of of the femur inwards, were present in fourteen cases, while the opposite condition existed in three cases, and in ten cases no mention is made of this symptom. When the dislocation was complete, the limb remained immovable in its abnormal position, until reduction was effected. The characteristic symptoms of the injury are those which are referable to the

* Further Observations in Surgery, 1860, p. 27.

† Klinik der Gelenk-krankheiten von C. Hueter, Leipsig, 1876, Zweiter Theil, Seite 316.

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fracture itself, and these are crepitus, easy reduction, and difficult retention. Crepitus is always an important symptom in ascertaining the existence of a fracture. If it is distinctly felt, there can be no further doubt that a bone has been broken. The presence of this symptom is of special diagnostic importance, in connection with this subject, as the symptoms of dislocation are usually so prominent as to engage the whole attention of the surgeon. In the cases reported, this symptom is alluded to eighteen times, and in the following terms: distinct, eleven times; faint, once; marked, twice; indistinct, once; slight once, and in two cases it was absent.

Bigelow places great stress on the presence of this symptom in rendering a diagnosis, when he says in his work previously quoted:* "To afford satisfactory evidence, cases of this sort should have been identified by autopsy or at least by crepitus." I believe that the crepitus is not the same as in ordinary fractures, as in these instances it is the result of two rough, bony fragments rubbing against each other, while in these cases it is a roughness we obtain by rubbing an articular surface against a broken surface of bone, hence, not quite as loud and distinct. The detached margin of the acetabulum, unless comminuted, remains attached to the capsular ligament, and is pushed before or aside of the head of the femur at the time dislocation occurs, and is dragged after it when reduction takes place. In most of these cases it is clearly stated that crepitus was felt just before the head of the femur slipped into the socket, or at the moment reluxation took place, and in both instances it must have been produced by the head passing over the rough, broken edge of the acetabulum. In the few cases where crepitus was felt while the femur was in the dislocated position, it must have been the result of the head rubbing against the detached portion of the rim.

The ease by which reduction was effected has attracted the attention of almost every observer. This is due to a more extensive laceration of the capsular ligament than in simple dislocation, and also to the removal of the obstacle offered by the intact margin of the acetabulum. By the fracture of the rim, a more direct and even route has been prepared for the head of the femur to return to its socket.

Reluxation has always constituted the most perplexing feature of these cases. Its occurrence has usually led to a more thorough examination and correct diagnosis. It is well known that in ordinary dislocations of the hip joint, when the bone has been once reduced, it remains in its place regardless of the after treatment, differing greatly in this respect from the same lesion of the shoulder joint, on account of the greater depth of the socket, and the action of more numerous and powerful

* Page 159.

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muscles for maintaining retention. Hueter* believed that the cases of habitual dislocation of the hip joint reported by Karpinski† may have been the result of injury to the rim of the acetabulum.

Reluxation takes place from the inability of the defective margin to resist muscular contraction. The difficulty in retaining the bone is increased by the depth of the fracture, and its approach to the junction of the superior and posterior portions of the rim. In this connection it is important to determine what portion of the rim is most frequently the seat of fracture. In twenty of the cases, special mention was made of this fact, as follows: Superior portion of rim, two; superior and posterior, seven; posterior, five; posterior inferior, four; inferior, one; anterior, one. When the inferior or anterior portion of the rim is fractured, there is no tendency to reluxation, provided the limb is kept in the extended position and slightly inverted.

DIAGNOSIS.

A most thorough and critical examination, while the patient is profoundly under the influence of an anæsthetic, is always necessary to establish a positive diagnosis. If spontaneous reluxation does not follow immediately after reduction has been accomplished, and there are sufficient symptoms present to warrant a suspicion of the presence of the injury, it would be advisable to test the functional integrity of the acetabulum by flexion, adduction and rotation of the thigh; if any part of the rim has become defective by fracture, reluxation will be sure to take place. This maneuvre, associated with the presence of crepitus, may be regarded as the crucial test.

The differential diagnosis must consider fractures of the neck of the femur with displacement, and simple dislocation. To distinguish this fracture from fracture of the neck of the femur, it is necessary to compare their most prominent symptoms:

FRACTURE OF THE RIM OF THE ACETABULUM.	FRACTURE OF THE NECK OF THE FEMUR WITHOUT IMPACTION.
Position of Limb.	
Thigh and leg flexed, adducted and rotated inwards.	Thigh and leg straight and rotated outwards.
Mobility of Limb.	
Mobility of limb is diminished.	Mobility of limb is increased.
Arc of Rotation.	
The trochanter rotates in its normal arc.	The arc of rotation of the trochanter is diminished.

*Ibid., page 423.

†Deutsche Militær ærzt. Zeitsch. 1873, No. 3.

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FRACTURE OF THE RIM OF THE ACETABULUM.	FRACTURE OF THE NECK OF THE FEMUR WITHOUT IMPACTION.
Crepitus.	
Crepitation is not rough, and felt as the head passes over the broken edge of the acetabulum.	Crepitation is rough, and felt when the limb has been drawn down to its normal length.
Head of Femur.	
The head of the femur is felt to be displaced.	The head of the femur is normal in its position.
Retention.	
The deformity reappears if by any movement of the limb the head of the femur is made to leave the socket.	The deformity reappears as soon as extension ceases.
History.	
Is most frequent in middle life and is the result of great violence.	If intra-capsular in variety, it occurs in the aged, and is the result of slight violence.

Crepitus and a tendency to reluxation are the symptoms on which we place the most reliance, to differentiate this fracture from simple dislocation. The akystopeurastic of Middeldorpf may be of great service to determine the existence of fracture of the rim. After reduction has been accomplished, a long, stout needle is passed through the tissue to the supposed seat of fracture. By lateral movements of its point, the defect in the margin, as well as the roughness of its surface, is ascertained. An effort should now be made to fix the detached fragment with the point of the needle, and, by rubbing it over the broken margin, a rough crepitus is elicited.

PROGNOSIS.

The prognosis must have reference to the preservation of life and the restoration of the utility of the limb. All of the old authors regarded fracture of the pelvic bones a grave lesion, almost necessarily leading to a fatal termination. I believe with, Dr. E. Andrews,* that all uncomplicated fractures of these bones tend to recovery, and that death is attributable in most instances to a lesion of some important pelvic or abdominal viscera. In twenty-three cases where the result is noted in this regard, thirteen recovered and ten died. The prognosis is less favorable if the floor of the acetabulum is also implicated in the fracture. Of four cases of this sort, only one recovered. In nine cases out of the thirteen that

*Transactions of the Illinois State Medical Society, 1873.

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recovered, the limb remained in place after reduction, and the recovery was complete. In four cases redislocation took place, the limb assuming the same malposition as after simple, unreduced dislocation of the femur.

TREATMENT.

The indications to be fulfilled in the treatment of this class of injuries are: 1st. To reduce the dislocation; 2d. To retain the head of the femur in the socket until union has taken place between the fragments.

The dislocation may be reduced by manipulation or by extension; in both instances, flexion constitutes an important step in the operation. Bigelow says:* "These displacements, especially the displacement backwards, demand the usual attempts at reduction by flexion. Although the bone inclines to slip from the socket, it can be retained there, in cases of a sort heretofore considered difficult of treatment, by angular extension, with an angular splint attached to the ceiling, or some other point above the patient; or if any maneuvre has reduced the bone, the limb should be retained, if possible, in the attitude which completed the maneuvre."

In seventeen of the case reported, the manner of reduction is specified as follows: By extension, eleven—in most of these cases extension and flexion were combined; by manipulation, two; by manipulation and extension, one; by manipulation over Sutton's fulcrum, one; by extension with pulley, two. In all but one of the cases the displacement was corrected without difficulty. In Pooley's case it was supposed that the detached fragment prevented reduction by being placed between the head of the femur and the acetabulum. In my own case, the use of the pulley was required from the length of time that had elapsed since the injury had been received. Had I been aware of the nature of the injury, no attempt would have been made to reduce the dislocation, as a restoration of the acetabulum could not be hoped for after such a long lapse of time since the injury was sustained. Permanent extension was applied more for the purpose of determining a favorable locality for the formation of a new joint, than with a view of retaining the head of the bone in its socket.

As in most instances a diagnosis cannot be made before reduction has been accomplished, surgeons will resort to their favorite methods of reduction. Should the nature of the lesion be determined beforehand, traction in the direction of the broken edge of the rim, and rotation of the limb inwards, will readily restore the normal relation of the parts.

* Dislocation hip joint.

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As we possess no direct measures of keeping the fractured surfaces in apposition, all our efforts must be directed towards preventing reluxation, by appropriate position and fixation of the limb and pelvis.

The depth and extent of the fractured margin, as well as the location of the fracture, will determine the difficulty in retaining the head of the femur in its normal position. If sufficient depth of the upper portion of the rim is left to serve as a support to the head of the bone, all that is necessary is to dress the thigh in the abducted position, so as to press the head of the femur against the floor of the acetabulum. As the contusions of the soft parts about the hips and pelvis are severe, a plaster-of-Paris splint cannot be applied as a primary dressing. The healthy limb and pelvis should always be included in the retentive dressing.

Bonnet's wire breeches, Dzondi-Hagedorn's apparatus, or Hamilton's splint, as advised by him in the treatment of fractures of the femur in children, will be found sufficient to maintain retention.

After the swelling in the soft parts has subsided, nothing more perfect could be devised than a plaster-of-Paris dressing, including both limbs and the pelvis.

When nearly the entire depth of the upper or posterior portion of the rim has been detached, muscular contraction must be counteracted by permanent extension with the weight and pulley, and immobility of the joint secured by appropriate splints. In cases of this sort, angular extension with an angular splint, as advised by Bigelow, will answer an admirable purpose. The unbroken part of the rim should be made the support for the head of the femur whenever practicable, as when the posterior part of the rim is fractured, the thigh should be dressed in the position of hyper-extension, a broad, firm, pelvic band, with a compress above the trochanter, will aid in keeping the bone in place, in approximating the fractured surfaces, and in preventing muscular spasms.

The treatment should be continued for a sufficient length of time to secure a firm union of the detached fragment with the broken rim, which, as in other fractures, generally requires from four to six weeks. The patient must be directed to exercise great care in the use of the limb for a considerable length of time after all dressings have been removed, so as to obviate any undue pressure against the recently repaired rim of the acetabulum.

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ART. V.—FRACTURE OF THE SUPERIOR MAXILLA.

BY DR. J. F. PRITCHARD, OF MANITOWOC.

Fracture of the superior maxilla always presents one of the most interesting studies for the surgeon, not only on account of its rarity, but from the difficulties attending its treatment, and complications attending its cause. A fracture of this bone can scarcely occur pure and simple, but must be attended by lesions more or less severe. All authorities agree as to the gravity of the injury, and many, no doubt, taking into account the complications, recommend no treatment. Hamilton, in his valuable work on fractures and dislocations, gives the most complete description and treatment of any of our modern works on surgery; and there, after detailing the management, as given by many surgeons, claims that many times it is almost useless to attempt treatment by retentive apparatus, but merely rest, leaving nature to effect a cure. In many cases, no doubt, she will accomplish a cure more or less perfect; but the location of the fracture demands at the hands of the surgeon assistance to prevent deformity. A slight deformity in any other location is of little account, but here we are bound to use the utmost resources of our art to prevent it.

In these days of improvement and invention, our part of the great work has not been neglected. We have resources at command that our fathers could not avail themselves of, and on this point, and in this particular fracture, we have resources that give us almost complete command of the field, whereby we can not only prevent deformities, but also promote union of fragments, which formerly were almost always removed. I refer here to modern dentistry, which is available in almost every town and city in the country, where we have dentists of skill sufficient for the purpose, and whose everyday business it is to make molds of the jaw.

Now, with an accurate mold of the jaw soon after the fracture and before tumefaction has taken place, I believe we can retain the fragments of any case of fracture of this bone in apposition, so as to effect a complete cure without deformity. The mold is first taken in wax in the usual way, and as soon after the accident as possible, in order to avoid deformity that might result from tumefaction, and also at this time the fragments are more easily replaced and retained than afterwards; and from this mold

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a skillful dentist can construct for us a plate or splint which will fulfill all the indications desired. In all cases vulcanized rubber is preferable to any other substance, not only on the score of cost, but also on account of its great strength and lightness, and not being so liable to cause irritation of the raw surfaces that are liable to occur in the mouth, as many other substances. It may be objected to by many that it will cause irritation of raw surfaces. I do not deny that it will cause some irritation, but it is a matter of everyday occurrence that dentists insert such plates in the mouth within a few hours after the extraction of the teeth; and I have yet to hear of any blood-poisoning—hardly of any complaint of inconvenience. Rubber appears to have antiseptic properties when vulcanized; at least, so it would appear from the manner in which it is used and the results obtained.

Celluloid is another substance used for plates that might be made available, but it has many disadvantages which rubber does not have; among these are the following: Very few dentists can work it properly, its liability to warp in the mouth, and greater difficulty in getting an accurate fit. Among the metals the only one available is gold, and its objections are too obvious to need detail.

In all cases where there is loss of teeth—and we can hardly conceive of this injury taking place without such loss—the space should be filled by increasing the thickness of the plate at these points, so as to meet the teeth in the lower jaw, thus producing additional strength and support at the same time; and in case of fracture of the lower jaw complicating that of the upper, we have support to these fragments also. The rubber plate should be so constructed that the teeth of the lower jaw fit into depressions in the plate, and when the jaws are brought firmly together there is no possibility of motion in any direction.

In connection with this, and as a retentive dressing, but suitable also in any case of simple fracture of the inferior maxilla, I have the following device to recommend: It consists of three parts: 1st. A leather skull-cap, made readily by any person sufficiently ingenious, and having a pattern of some plain night-cap, and the use of a sewing machine or "a shoemaker." This cap must fit closely, so that when the dressings are once in place, there can be no change. 2d. A well-molded inferior maxillary splint of pasteboard, if strong enough, or felt if obtainable—of tin, if no other material is at at hand, and we can have the splint fitted. It must fit accurately and support the parts perfectly, without causing pain at any one point. 3d. Over the splint, and made to correspond in shape, nearly, is a leather chin-strap, which is also easily made, in the upper extremities of which are inserted eyelets, four or five in number, to correspond with a like number in the skull-cap. The application of this dressing is obvi-

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ous. After replacing the fragments and adjusting the plate, the jaws are brought firmly together and held by an assistant; then apply the inferior maxillary splint and chin-strap, and adjust the skull-cap. There should be at least an inch and a half between the ends of the chin-strap and the projections on the temples of the skull-cap, in order to have sufficient room for stretching of the leather or laces when these are laced together. After all is laced firmly, the patient should be unable to separate the teeth of the upper and lower jaw.

It may be objected to this dressing that the patient cannot take sufficient nourishment, but it is a very simple matter to leave an opening in front of the plate in case the teeth are all gone in that part of the mouth, and through this liquids can easily be sucked; or, if there be inability on the part of the patient for this, food may be thrown into the back part of the mouth with a syringe through a very small opening. The mouth should be washed frequently, by means of a syringe, with deodorizing or disinfecting lotions, and the patient cautioned not to swallow any of the discharges from the raw surface of the mouth. By this means a comparatively clean surface may be had, and none of the usual consequences of swallowing such discharges obtained. In all cases before giving food the mouth should be thoroughly washed. Food should be given quite often, and little at a time, for the first days. The kind of food must be selected according to indications for each individual.

In this connection, and as an illustration of the success of this dressing, I have the following case to report:

Hermann S—, German, aged about 50 years, subject to epileptic convulsions for many years, on March 4th, 1879, while harnessing his horses, fell in convulsions under a large horse. The animal stepped on his face, it appears from the injury, twice at least, producing an injury that is very unusual. All the teeth of the upper jaws were broken off, except three, the right bicuspids and first molar, and these were loosened. The incisors and canines of the lower jaw were also broken off and hanging by the gums, leaving only the molars in the lower jaw firm. The superior maxilla was broken through the body on both sides, so that by taking hold of it, it was freely movable, both laterally and vertically. It was hanging down so that it could be pressed nearly one half inch upwards before reaching its place. There was no separation of the inter-maxillary suture, but a constant oozing from the nose, which lasted nearly a week. The nasal bones were not disturbed. His face was contused from the eyes downward with marks of the calks of the shoe, as far back as behind the ear on the right side. None of the external wounds extended deeply, but numbered five or six. It had, at the time, very much the appearance of either both feet in succession having come in contact with his face, or

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else twice with one foot. There was no fracture of the inferior maxilla, except the loss of teeth already mentioned. In twenty-four hours after the accident, swelling was so great that he could not be recognized by his friends, and there was a constant discharge of blood from his mouth and nose.

He applied at the office of my friend, Dr. C. E. Gridley, a very skillful dentist of this place, for the removal of the broken teeth. Dr. Gridley immediately recognized the nature of the injury, and, after removing the fragments of teeth and alveola by incision, sent for me, and we applied dressing as follows:

After sponging the raw surface of the mouth to stop the flow of blood, and carefully replacing the broken fragments of bone, an impression was taken of the upper jaw, in wax, in the usual way, except that in removing the impression from the mouth, the fragments were held by an instrument inserted between the jaw and the wax, to prevent further displacement by suction. From this impression a plate was first made in sheet wax, and thickened at points to correspond with the points of support in the lower jaw. Thus, by bringing the jaws firmly together, we had an impression of the teeth of the lower jaw in the wax plate. From the plate of wax a plate of rubber was made to correspond exactly, so that when inserted it not only fitted exactly, but when the jaws were brought together by means of projections outside of the alveolar ridge, pressed the fragments exactly into place and held them firmly and comfortably.

His other dressing was a felt splint with Barton's bandage. At first the bandage was carefully stitched to prevent movement, but in a day or two it was found loosened, and we then devised the leather skull-cap and chin-strap that has been already described, after which we had no further trouble, the fragments remaining in perfect coaptation. The discharge from his mouth was very profuse for about two weeks. We cautioned him not to swallow any of it, and gave him carbolic acid and other solutions to syringe out his mouth frequently. After the first two weeks, he regained sufficient control of his lips to enable him to dispense with the syringe altogether. He could at all times easily get rid of fluids injected, having complete control of the pharyngeal muscles.

We had no difficulty in keeping the parts clean, and getting good union. He took liquid food without difficulty. There were no teeth remaining in the front part of his mouth, and at this point the plate was not increased in thickness. At no time was there any fever, and no unpleasant symptoms, except he complained of pain for the first week.

The healing process was complete in four weeks, at which time we removed all the dressing for the first time, and found slight anchylosis of

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the lower jaw, with the whole of the raw surface in the mouth healed except a few little points, and these healed very soon afterwards. The anchylosis was temporary, and disappeared as soon as he had the dressings removed in order to give him free use of his jaws. We replaced the plate as a safeguard, and continued it one week longer, making, in all, five weeks that he had worn the dressing. There was not the slightest deformity left, except that from loss of teeth, and that is one that can be readily supplied.

Considering the severity of the injury, and its location, I think we can claim for this dressing a perfect success.

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ART. VI.—DIPHTHERIA.

BY DR. B. O. REYNOLDS, OF GENEVA, WIS., MEMBER OF COMMITTEE ON PRACTICE.

This disease has been known under different names from the earliest history of medicine. Arctaeus described it in A. D. 150, and Macrobius in A. D. 380. It visited Holland as an epidemic in 1337 and in 1557. It appeared in England in 1517, and in France in 1576. Fothergill describes an epidemic of diphtheria as it occurred in England in 1748, and Huxam, in 1757. In this country, we first have an account of it as an epidemic in Kingston, N. Y., in 1735, in Boston in 1736, in New York City in 1753 and 1771. Bretonneau wrote of this disease as it appeared at Tours, from 1818 to 1821, and, like most of the French writers of that day, considered it identical with croup. In 1881 it appeared again as an epidemic in Boston. In 1856, a very fatal epidemic of this disease raged in San Francisco and other portions of California, since which time it has been more or less prevalent throughout almost every portion of the United States.

Massachusetts lost from this disease in 1876 and 1877, 5,244. The deaths in New York City in 1875, from diphtheria, were 2,311. The deaths reported from the city of Milwaukee in 1879, from this disease, were 151, amounting to more than thirteen per cent. of the entire deaths in the city. Probably not less than 1,500 have fallen victims to this disease in our State during the past year.

From our long acquaintance with the history of this disease, together with its almost universal prevalence, its cause and pathology ought to be well understood, yet there is no disease regarding which more diverse views are entertained by the medical profession than this.

It is classed among the zymotics, such as small pox, measles, scarlet fever, etc. Zymosis we understand to be but a process of fermentation going on in the blood, which characterizes, in a general way, all the diseases of this class.

Oertel, Hueter, and some others, contend that the *materies morbi* of diphtheria is a vegetable parasite which attaches to the mucous membrane of the throat, thence entering the blood and giving rise to all the morbid phenomena witnessed in this disease. They maintain that the malady is

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at first but local, and afterwards becomes general by absorption of the poison from the throat, the focal point of infection.

Hueter says: "Without micrococci there can be no diphtheria." (Ziem. Cyc., Pr. of M., Vol. 1st, page 592.) Professor Butlin, in a recent paper before the British Royal Society, says he found these bodies in the fur of the tongue, regardless of the nature of the disease, and in health.

Dr. Satterthwaite, when speaking of diphtheria, says: "I have never found any organisms connected with the disease that could in any way be distinguished from those found at other times in the body." (Rep. B. of H., N. Y. City, 1877.)

Drs. Oertel and Hueter succeeded in killing rabbits by injecting into their bodies the poison of diphtheria, thereby, as they claim, establishing the theory of *local infection*, from which radiates the poison throughout the whole body. Drs. Curtis and Satterthwaite succeeded equally well in this regard, with injections impregnated with the scrapings of *a furred tongue from a healthy person*, and they allege that the effects upon the animal is identical in all respects with inoculations from the diptheritic membrane. (Annual Rep. B. of H., N. Y. City, 1875.)

My observation compels me to the belief that in whatever way the poison may be introduced into the system, the disease is general, and that the local exudative membrane is but the result of a pathological change peculiar to the disorder. It is no more strange that the poison of diphtheria should develop this peculiar membrane, than that that of small-pox should develop a pustular eruption of the skin, or that a peculiar efflorescence of the skin should be characteristic of scarlet fever.

In all the cases that have come under my care at the onset of attack, the constitutional symptoms have preceded the local exudation from twelve to thirty-six hours, and in two well-marked cases, running the usual course, no exudative membrane appeared. One fact seems well settled in regard to this disease, and that is, that a poison (whatever it may be) enters the system (in some way), and rapidly disintegrates the blood, prostrates the entire nervous system, and, in fatal cases, generally produces death by asthenia. And this points us to the general indications in its treatment.

This disease is not governed by any known climatic or meteorological laws, or atmospheric conditions. It has been known to rage with equal violence in summer's heat and winter's cold; in marshy and ill-drained localities, and upon the driest and most elevated portions of our country. It has flourished amidst the sands of the Pacific coast, and upon the granite hills of New England; in the densely populated cities of the East, and upon our sparsely settled Western prairies.

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Regardless, of sanitary or climatic conditions, it has pursued its deadly march in this country for more than a quarter of a century, until there is scarcely a neighborhood that it has not visited, or a cemetery that does not contain its victims. With a full appreciation of the importance of sanitary measures, and the relation which a neglect of them bears to the spread and malignancy of all contagious and epidemic diseases, we must, I think, look beyond anything sanitarians have as yet pointed out for the primary cause of diphtheria.

When our attention is directed to defective sewers, illy drained soil, impure air, contaminated water, etc., we can but remember that the disease occurs where sewers are unknown, in the driest of soils, where the atmosphere is pure and the waters uncontaminated.

When they tell us it originates from local filth, personal uncleanliness, bad ventilation, etc., we are reminded of the fact that it frequently makes its first appearance and claims its victims in the abodes of refinement and wealth; that filth, poverty, stench, and badly ventilated apartments have ever been the sad heritage of no inconsiderable portion of mankind, and that diphtheria is only of recent origin in this country; that the inhabitants of the open country, the broad, breezy, thinly settled prairies are no strangers to its visitations; and, finally, that this disease is greatly on the increase, while meantime sanitary science has taken no backward steps.

The disease with us began in the latter part of May, 1879—not at first severely—continued through June and July with increased violence, abated somewhat during the extreme heat of August, increased again in the month of September; the frosts of winter seemed but to foster its strength; the moderate temperature of spring has not entirely abated its influence, and it lingers among us, and upon our borders at the present time; but its force appears nearly exhausted. All classes were alike subject to its attacks; the high and the low, the rich and the poor, have suffered alike. The child of poverty and filth, the ill-fed, half-clothed, uncared-for children have as generally escaped, or recovered from, its attacks as fortunately as those of the opposite class.

The human mind is ever desirous of explanation, and of explaining the occult causes of every phenomenon that presents itself; and many physicians are at no loss for an explanation of the cause of diphtheria in various localities where it occurs. Among a great variety of causes assigned, impure water, perhaps, is the most frequent. A *cause is an invariable antecedent*, without which a thing cannot take place.

There are no purer waters found in this country than those of Geneva village. The well of the public school, and many others where the disease prevailed most, were repeatedly examined, and, in every instance, Heisch's test proved the absence of putrescent matter.

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I have now in my office a half-pint of water taken from the well of our public school in August last, and it will compare favorably to-day with any specimen of distilled water kept for the same period.

Our water is derived mainly from the lake, which is made up of springs from the adjacent hills. The village is situated at the outlet, upon dry ground, which rises from fifteen to fifty feet above the lake level. The first five or six feet is composed of clay, intermixed with gravel; then a clean, sharp, dry sand is found, and continues until the lake level is reached, when an abundance of water is found. The water does not rise at any time higher than the lake, but rises and falls with it; hence, the water in our wells seldom reaches the depth of more than one or two feet. Some of the wells near the shore are what is called "drive wells," and, as they prevent all surface drainage, they are supposed to afford this filtered lake-water in its greatest purity.

In contrast with Geneva is a neighboring village, whose water is derived exclusively from surface drainage, and proverbially bad; whose wells overflow in spring, and become dry in autumn, and whose cellars are in like condition, but always damp; and yet they have had little or no diphtheria for many years.

Dr. Samuel Bard, and a few other American writers, with Bretonneau and other French writers, considered croup and diphtheria identical. Observation teaches us that they are not identical, or even analogous. Time will not permit of pointing out the many marked differences and incongruities of the two diseases. The fact of the highly contagious nature of the one, and the non-contagiousness of the other; the tendency to death by asthenia in the one, and of asphyxia in the other; the directly opposite class of remedies found useful in the respective diseases, indicate nothing identical or similar in their character.

The treatment relied upon in inflammatory croup, would tend to hasten the fatal termination of diphtheria, and *vice versa*. I have found the only resemblance in the two diseases to consist in the mechanical obstruction of the trachea by false membrane, which occasionally takes place in diphtheria; but this membrane is not identical with that found in membraneous croup.

A kinship appears to exist between diphtheria and scarlatina, but they are not identical. In both we have a blood poison. A rash in scarlatina is the rule, in diphtheria it is an exception; in both we have constitutional disturbance, inflamed throat and albuminous urine; but diphtheria is seldom attended with uræmia, convulsions, or dropsical effusions, all of which are common in scarlet fever. Unlike scarlatina, diphtheria is said to afford no protection from a second attack; like scarlatina, the disease is highly contagious, and, like other diseases of

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its class, proves most fatal when it attacks those of a debilitated constitution, children of low degree of vitality, or of scrofulous taint.

The symptoms of diphtheria are too familiar to those here present to require a description at my hands; at maturity they are so well pronounced and unmistakable that no intelligent physician would be likely to overlook; but there are cases, which at the beginning, and before the membrane is formed, that so nearly resembles pharyngo-tonsilitis that considerable care must be exercised if we would avoid mistake. We have seen cases at this early stage where the probabilities were so evenly balanced, that a diagnosis was reserved until a subsequent visit.

As the nature and pathology of this disease (like that of all zymotic affections) yet remains somewhat obscure, it is not surprising that its treatment has often been vacillating, experimental and uncertain.

There are cases so mild in character that no medication whatever is necessary, and, on the other hand, so malignant and rapid in their course that any treatment known to the profession will fail to arrest or mitigate. From what is known of its pathology, a sustaining, tonic and stimulating treatment is plainly indicated, and the efficacy of this plan has been verified by thousands of judicious physicians during the past few years. This treatment is particularly required in cases of considerable severity, as the tendency is to depression and death by asthenia; in such cases tonics, stimulants and nourishing diet should be commenced with early, and persisted in systematically. We have learned to place great reliance upon quinine, chlorate of potash, tincture of the chloride of iron, and alcoholic stimulants, and they rarely disappoint us, unless the cases are extraordinarily malignant.

We have no stereotyped formula, but would prescribe for a six-year old child about the following, viz.: Quinine gr. ij: tr. ferric chlo. m 10; to be taken together in a tablespoonful of whisky-sling every four hours; also one teaspoonful of a saturated aqueous solution potass. chloratis every hour during the day, but less often during the night, to enable the patient to get more rest. If marked asthenia is present, or occurs during treatment, we increase the alcoholic stimulant decidedly. We have given, with apparent good results, to a ten-years' old child, a half an ounce of whisky every hour. We insist upon good nourishment throughout, and should the stomach reject medicines, nourishment, or both, we direct their administration in the form of enemas.

Believing that the throat affection is but the manifestation of a distinct constitutional disease, and that no mere local treatment can arrest the progress of the poison already in the system, we regard local treatment as of but secondary importance; and it often does more harm than good, particularly with timid children.

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To attempt the removal of the membrane, or to mop the throat with medicated solutions, we believe to be worse than useless, the frequent administration of the chlorate solution being all that is required in all ordinary cases. Of course, should gangrene ensue, or the partly detached membrane interfere with respiration, we would resort to any proper means for the relief of these unusual complications. Spraying the throat with soothing and antiseptic remedies are less objectionable, but we have long since abandoned their use in the case of young children.

When the patient is old enough to use gargles intelligently, we frequently direct their use, not with a view of arresting the disease, but to soothe and mitigate, in some measure, the local inflammation. We would do the same in scarlatina anginosa for the same purpose.

As a gargle, we think we have derived the most benefit from a solution of permanganate of potassa, 10 or 12 grs. to the ounce of water; but this remedy frequently produces vomiting, and has a very disagreeable taste—qualities which render its use quite limited.

Dr. McKall, of Washington city, about twenty years ago, became so enthusiastic over the success of permanganate of potassa in diphtheria, that he published an article in a medical journal, claiming it as a specific; but, like all other claims of this nature, it has proved delusive and visionary.

The inhalation of steam or medicated vapor is highly recommended by many, and is a *sine qua non* with those who believe in the local parasitic introduction of the disease, into the system. In youths and adults we have used it freely as an adjunct to the general treatment, but what effect (if any) it had upon the disease, other than to moisten and soothe the throat, we are unable to determine. The throat should be protected from ear to ear with a covering of flannel, cotton wool, or emollient poultices, should there be considerable tumefaction of the cervical glands.

In several cases of malignant type a spontaneous eruption made its appearance about the third or fourth day, followed by immediate convalescence, and, seeking to stimulate this rash, we have, in several cases of like character, employed embrocations of croton and olive oil upon the body, with apparent benefit. In one case, however, no benefit resulted, although the artificial rash became well established.

The extension of the false membrane into the trachea, constituting the so-called "diphtheritic croup," is attended with great fatality. When it occurs before marked asthenic symptoms appear, tracheotomy will doubtless afford the best chance for relief.

Another complication is nasal hemorrhage, which not unfrequently appears about the beginning of convalescence, and, by its exhausting and debilitating influence, speedily compromises the lives of our patients.

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When the ordinary styptic and stringent remedies fail to arrest it, plugging the nares at both extremities should be promptly resorted to. We think we have been instrumental in saving several lives by this procedure.

The public press and medical journals teem with specifics for this formidable disease, but as such they have ever proved will-o'-the-wisps, and while we can but hope that improvements in the treatment of this and all other diseases will continue in the future as in the past, we may well doubt that a genuine specific in this disease will soon, if ever, be discovered, and the physician who abandons approved and well-attested methods of treatment for any of the so-called specifics, based upon the mere *ipse dixit* of some obscure or unknown writer, is but trifling with the lives of his patients.

One article that is claimed as a specific in diphtheria is alcohol, and from the fact that it has proved a very useful remedy, and that its claims have been advocated by highly respectable authority, it is entitled to more than a passing notice.

Prof. E. N. Chapman published, in 1878, a work of about one hundred pages, entitled, "Antagonism of Alcohol and Diphtheria." On the title page is found this positive declaration: "Alcohol is as antagonistic to diphtheria as belladonna to opium, or quinia to malaria."

On page 29 he says: "Quinia is an efficient ally to alcohol," and "Alcohol and quinine have no greater power to cure, than to prevent diphtheria."

On page 37 is found his prescription for a severe case of diphtheria in a child "seventeen months old." It consists essentially of six grains of quinine, one ounce of whisky, and two ounces of water. Of this mixture he directs to be given, "teaspoonful doses every hour and a half." The child gets one-fourth of a grain of quinine to every ten drops of whisky, and it would puzzle most physicians to determine which he relied upon most, the "specific" or the "ally."

On page 49, we find his prophylactic prescription, and it consists of twenty-four grains of quinoidine and sulphate of cinchonia, and eight ounces of whisky; dose, "fifteen drops to a tablespoonful, four or five times a day."

I have never treated a diphtheritic case exclusively with alcohol and quinine, but have thoroughly tested them as a preventive, and have found them decidedly unsatisfactory. A very intelligent physician of a neighboring village, who had great faith in Dr. Chapman's mode of treatment, lost three of his own children, in spite of alcohol and quinine.

While we do not regard alcohol in any proper sense a specific or prophylactic in diphtheria, we nevertheless regard it as a very valuable

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therapeutic remedy, judiciously administered in cases presenting symptoms of marked asthenia, and in all severe cases, we administer it freely in anticipation of this event.

The number of well marked cases treated during the year were 123. The number of deaths were four. Percentage of deaths, 3.69. This report does not include cases seen in consultation, nor three fatal cases that came under my charge but a few hours before death, having been under other treatment for several days.

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ART. VII.—UTERINE HEMORRHAGE.

BY DR. G. F. HUNT, OF WEST BEND, MEMBER OF COMMITTEE ON OBSTETRICS AND GYNÆCOLOGY.

There is no branch of medicine of greater importance to the common practitioner, nor one which should more earnestly engage his attention, than that of obstetrics, and no division under this branch of greater moment to him than hemorrhage during the parturient state. When the medical student has passed his final examination and received due authority to practice his chosen profession, no part thereof causes him greater anxiety by day and sleeplessness by night, than how and by what means he shall successfully and satisfactorily conduct his first few cases of obstetrics.

Many a young man, by a neglect of this branch of his profession, has either lost his first case, or made such bungling work of his first half dozen cases, that he either had to remove to the next town, or labor under great disadvantages for a long time before being able to establish a reputation.

The first form of hemorrhage which will engage our attention, will be that arising from abortion.

From the moment the uterus becomes impregnated until its contents are expelled by its own contractions, there is more or less danger from hemorrhage; the time may be one week or it may extend over a period of forty weeks.

If a woman, at the end of five month's gestation, or any shorter period, has the contents of the womb expelled, it is called an abortion; after that period, and before full term, it is then termed premature labor. All married females are, more or less, liable to abort or miscarry; and we believe that at least one-half, if not a majority of them, do so during the child-bearing season; and, therefore, any one can see at a glance that the general practitioner will be frequently called upon to manage and treat cases of this kind.

Do primiparæ abort more frequently than multiparæ? We think not. To be sure there is a pretty large per cent. of these cases to be found among females pregnant for the first time; but we believe the number falls far short of those that occur during subsequent pregnancies.

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Many females enter into the marital state in poor health, from long continued uterine disease, and, under these circumstances, will not become pregnant until the disease is cured or ameliorated, either by nature or art; so, also, many females in robust health enter into the same relations, bear children without any trouble, who also subsequently lose their health, become pregnant only to add to their woes by a further increase of undermined health by an untimely miscarriage. Once she was in the bloom of health, the uterine organs sound, and in readiness to perform their allotted functions; but by too frequent child bearing, over exertions, poor food, imprudence of various kinds, the productive organs become changed from a physiological to a pathological condition; and, if perchance, while in this state, she becomes pregnant, miscarriage is quite sure to follow.

Mortality: This is small, comparatively. The deaths resulting from hemorrhage before. during, or after abortion, are extremely few. The blood may flow, as it were, in torrents, the lips become pale, the face blanched, the pulse almost gone, and death apparently at hand to close the scene, but still she does not die. Nature, with her restorative power, comes to the rescue, and, in a large proportion of cases, unaided by art, stops the flow of blood and saves the life of the patient.

But nature, with all her wonderful powers to arrest the flow of blood and save life, will sometimes fail, unless aided by the skillful obstetrician. When first called to a case of this kind, our first thought should be, can we save the mother, if she is in danger; and in the next place, can she be carried to the full term and be delivered of a living child; but no great risk should be hazarded to carry her to full term, if thereby her life becomes endangered. The obstetrician's motto should always be, save first the life of the mother, and then look after her offspring.

When called to treat a case of uterine hemorrhage, resulting from threatened abortion, we must be governed in our treatment according to circumstances. We should ascertain, if possible, whether the fœtus be living or dead; if living, we should endeavor with all the powers and resources at our command to stop uterine contractions, and arrest the flow of blood. This is not so easy a problem to solve during early pregnancy; but later on, the viability, or non-viability, of the fœtus, can be ascertained with a much greater degree of certainty; and where there is any considerable doubt on this point, it is our duty to proceed upon the presumption that the child is living, and our efforts should be directed at once to an endeavor to save both.

The sheet-anchor treatment in all cases of this kind, where both mother and child are in peril, is absolute rest and opiates in pretty large doses. The patient should be put to bed at once, as this position is most

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likely to insure a quiescent state of the womb, and will have a tendency to lessen uterine contraction. Opiates should be given freely and in middling large doses at the very outset, otherwise much valuable time will be lost, and more especially if the case be one of only three months or under.

In just this class of cases which we are called upon to treat for threatened abortion, the vital relation existing between the ovum and uterus is very slender, and, therefore, it frequently happens that the timely administration of a powerful narcotic in the way of an opiate, will at once stay the threatened calamity by arresting the flow of blood and putting at rest the irritable uterus. The long list of feeble narcotics and nervines recommended by the timid to arrest the flow of blood, and to put at rest the excited womb, in cases of this kind, I will not mention; their name is legion, and all inferior to the one mentioned above. If the frailty existing between the ovum and uterus is constitutional, or acquired by previous abortions, we must not then anticipate such a favorable result; but if the impending danger has been occasioned by over exertion and fatigue, our treatment in the way of rest and narcotics will often be crowned with success.

In addition to rest and opiates, cold applications to the abdomen, and even into the vagina, is a powerful adjuvant in arresting the flow of blood. The acetate of lead is highly vaunted by some authors, and is one of long standing, and may be worthy of trial.

The physician is frequently called to attend cases where he finds, upon arrival, that the fœtus has already been expelled and a profuse flow of blood kept up by retention of the secundines. In cases of this kind, if the patient's strength will permit, and the expulsion of the fœtus is of recent date, he should proceed without delay to introduce his fingers and even his whole hand into the vagina, if practicable, and with one or two fingers, hook down, as it were, the secundines. If the abortion be one of three months or under, it will be safer and better not to make persistent efforts to accomplish this, but rather trust to nature to accomplish the work, because too long and persistent efforts will only add to the danger of the patient; but if it be one of four months or longer, a physician would hardly be justified in abandoning his efforts in this direction until his labors were crowned with success.

We have often observed that the fœtus will be thrown off at or about three months of gestation, with little disturbance of the general system, with very little loss of blood, and the secundines retained. The time in which these will be expelled without aid varies wonderfully in different cases. In a pretty large majority of cases we should look for their expulsion within twenty-four hours, or at least within thirty-six hours after the

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passage of the fœtus; the longer the event is stayed the greater will be the danger arising both from fever and profuse flooding. They may be retained one week, and in rare cases even much longer. It is in just these cases that miscarriages become a serious matter to both patient and physician. The latter may be censured if he makes light of the matter by telling his patient or her friends that all will be well; the former, on account of the enormous loss of blood which generally precedes, and sometimes follows, the discharge of the secundines.

In this class of cases of retained ovum, where we have failed to extract it or decline to interfere (as we often do), unless called early, we enjoin absolute rest on the part of our patient, with instructions to take a large opiate as soon as the flow of blood begins, and a second dose immediately after the expulsion of the secundines. The country practitioner will fully appreciate this precaution, as his patient may reside ten miles away. During the time intervening from the expulsion of the fœtus up to the time of the subsequent flow of blood in these delayed cases, we administer no medicine if the patient is rather robust, and especially if she is corpulent (as is sometimes the case); but, on the contrary, if the patient is feeble and prostrated, and her general health undermined from previous abortions, we then pursue a mild tonic and stimulant course in order to prepare her for the better withstanding the shock, which is almost sure to come, when the uterus again takes on contraction and expels its contents. This last great effort of nature to free itself of a dead foreign substance is, almost without exception, preceded by a profuse flow of blood, and measures should be adopted to prevent as little loss as possible without materially interfering with the uterine contractions; therefore, if present at this time, we make it a rule not to interfere at all with nature's work, until the uterus is freed of its contents, provided the pulse is strong and the patient shows no sign of fainting; but if she is weak, irritable, and exhibits signs of great suffering, as is sometimes the case, we at once administer an opiate and stimulant combined. This plan of treatment will not arrest the action of the uterus, unless the opiate be given in very large doses, which is not necessary to accomplish our object.

Retention of the placenta, at full term, may cause hemorrhage and occasion the death of the mother. The retention of the placenta under these circumstances, will frequently be followed with great loss of blood, by preventing the walls of the uterus from contracting upon itself, and, owing to the large size of the organ, and its consequently large bleeding surface, renders this form of uterine hemorrhage far more dangerous than that arising from abortion or premature labor.

No patient can be considered safe while the placenta remains in the uterus after the delivery of the child, and any man would be guilty of

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gross negligence who would allow the placenta to remain in utero under these circumstances longer than an hour or an hour and a half; because experience proves that after this period has elapsed, in a majority of cases, the placenta will not be expelled by the unaided powers of nature. The longer we wait, under these circumstances, for nature to accomplish her work, the greater will be the danger to the mother, and the placenta delivery will be attended with greater difficulties, and with increased danger to our patient. By waiting too long, there will be increased irritation, danger of inflammation, diminished uterine contraction, greater loss of blood, greater suffering, and, finally, when the placenta is removed, there may be a sudden collapse, and death closes the scene.

To prevent hemorrhage by the proper extraction of the placenta, various methods have been recommended by different authors. To our way of thinking we believe he who does least, under ordinary circumstances, does the best. In a very large proportion of cases there is nothing to be done. Nature can, unaided by any powers we possess, do the work better and safer than when aided in her mysterious workings. If the physician possesses the confidence of his patient, let him wait twenty minutes or half an hour, and he will be gratified in most cases, upon examination, to find the placenta already expelled or only lying just within the vagina. All this will have been accomplished without much suffering, little loss of blood, and still less danger on the part of the patient.

After this period of time has gone by, and no delivery taken place, it will then be safer to make slight traction on the cord with one hand, and with the other make pretty firm pressure over the abdomen, or even grasp the uterus, and in this way endeavor to remove the placenta, by pulling on the cord and increasing uterine contraction. These efforts will often fail when resorted to twenty minutes after the birth of the child, but we believe they are worthy of trial before thrusting the hand forcibly into the womb, which operation is generally attended with considerable pain and much loss of blood. If these means fail, then, without delay, boldly, but gently, thrust the hand into the uterus, grasp the placenta, and, with the next pain, remove it. Before this last operation we make it a rule in our practice to administer a stimulant.

We are well aware that many will object to this mode of managing a retained placenta; but we speak solely from experience, and experience is the best teacher. It was our former practice in years gone by to administer ergot in almost every obstetrical case, either to hurry through with the second stage of labor or to complete the third, and sometimes both. All this we now have abandoned to our entire satisfaction, and, we believe, for the best interest and safety of our patients.

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We believe, since ergot has come into such universal use in obstetrical practice, there are more delays in the second stage of labor, more retained placentas, and, consequently, a more frequent resort to the forceps, and more dangerous floodings during and after the completion of the third stage. We would not wish to be understood as entirely ignoring the use of ergot; but, if used too soon during the second stage, it only necessitates the more frequent use of the forceps to prevent delayed labor, and increased suffering on the part of the patient.

AN ADHERENT PLACENTA IS A COMMON CAUSE OF HEMORRHAGE.

In a certain proportion of cases of retained placenta, there will be found a morbid connection between it and the walls of the uterus. If the contractions of the uterus come on pretty strongly, and are also aided by the administration of ergot as well as traction of the cord, without the placenta being delivered at the end of an hour or an hour and a half, there will arise a strong suspicion that we have an adherent placenta to deal with.

Under these circumstances, it is our duty to administer a powerful stimulant at once, if there has been profuse hemorrhage, or if the patient shows any signs of weakness; with one hand grasp the abdominal walls, or make firm pressure over the uterus, and with the other pressed into the womb up by the side of the placenta, break up any adhesion that may be found to exist between it and the uterine walls. In most cases this can be accomplished expeditiously, and with no great loss of blood, and still less danger. But we will not always succeed so easily. In a few cases there will be found such a close connection between placenta and uterus, such vast adhesions, occupying the space of several square inches, that we shall be compelled, either to dissect, as it were, the placenta with the ends of our fingers, from the walls of the uterus, or tear it from its attachments by piecemeal. Of course, we should by all means try the former method before resorting to the latter. Many a mother has been lost, owing to the timidity of the medical attendant in cases of this kind, by tearing away and removing only half or two-thirds of the adhering placenta. No woman is safe for a single day, who has been abandoned by her attendant with one-fifth of the afterbirth remaining behind. The womb under these conditions will not contract evenly and well; the uterine walls cannot come in close opposition, consequently there will be great danger of flooding, subsequent inflammation, which may terminate fatally.

HEMORRHAGE ARISING FROM PLACENTA PRÆVIA.

We approach this branch of our subject with some misgivings, because we do not expect to throw much new light upon a subject that has engaged the attention, and called forth long and learned essays from the

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best medical minds of both Europe and America. This form of hemorrhage is called "unavoidable," in all works upon midwifery. This name was applied to it, no doubt, because the abnormal situation of the placenta must produce it, and nothing which the patient may do, or the physician recommend, can stay the dire calamity.

The ancients had very vague notions in regard to the true nature and pathology of this form of hemorrhage. They supposed it was the result of an accident, whereby the placenta became displaced, and not by a mere freak of nature. They had no idea that the placenta was originally planted over or near the os uteri internum, but by mere accident it had become misplaced or fallen down to the point where it was found at the time of the first hemorrhage.

The time at which we may expect flooding in these cases, will depend in a great measure upon the location of the placenta; the higher up it is placed on the uterine walls, away from the os uteri, the later in gestation will occur the uterine flow. The uterus originally is of a pyriform shape; by its expansion, as the fœtus becomes more and more developed, it gradually assumes an ovoidal shape by the change which takes place in its cervical position. The fundus first enlarges to accommodate the growing embryo; but after a period of about six months, this enlargement takes place mostly at the expense of the cervix; so that we may readily understand, that when the placenta is planted low down, or directly over the os uteri, that the very forces of nature which cause the expansion of this portion of the uterus, will also have a tendency to detach it from the walls of the uterus, and flooding will be the inevitable result.

We possess no means of making a correct diagnosis in these cases, and the patient remains in ignorance of her great danger until warned by a sudden gush of blood. We are unprepared to say whether violent exercise or excessive fatigue hastens on the sad calamity. Of the five cases which have come under our observation, only one could be traced to fatigue, after a long walk; but whether the patient subjects herself to violent exercise, reclines on a sofa, or is quietly slumbering in bed, no power can stay the dire calamity.

If the first flow occurs as early as the eighth month of pregnancy, we can assure ourselves with confidence that it is a central implantation, or nearly so; but if this does not take place until eight months of pregnancy have already elapsed, we can assert with considerable confidence, that it is only a partial prævia; but to this rule I believe there are rare exceptions, that is to say, once in a while a woman will be taken with labor pains and flowing about the same time, at or nearly full term, and the labor completed within twenty-four or forty-eight hours.

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IS THE FIRST FLOW OF BLOOD SMALL OR LARGE IN AMOUNT?

It is amusing, rather than instructive, to read up the literature of this subject. One would suppose, from the graphic descriptions given by some writers, who perhaps never saw a case, except in imagination, that the very flood-gates were open, and streams of blood poured forth. Now, all this is mere imagination, so far as a majority of the cases are concerned. In quite a large per cent. of the cases, only a slight show of blood will make its appearance, or one gush of blood take place and then cease for a while. So slight will be the flow of blood in a few cases, that even the family physician will not be summoned. The patient not being aware of the grave character of the symptoms, will simply go to bed until the flow of blood is arrested by the unaided powers of nature. But it is quite sure to return, increasing her anxiety and arousing a suspicion on the part of her friends that all is not as it should be, and then, perhaps, her medical adviser is sent for. This may occur at the first, second, and, perhaps, not until the third recurrence of the bleeding.

In a few cases which have come under our observation (in two instances, at least), no medical aid was summoned until actual labor had set in. We speak of this fact, because we believe that medical men, in writing upon this subject, are very apt to magnify the loss of blood which actually takes place during the seventh and eighth months of pregnancy, and thereby mislead the junior members of the profession.

We do not wish to be understood as saying that no profuse hemorrhage ever takes place during the eighth month of pregnancy in a central prævia; we only desire to do away with the impression, which is firmly fixed in the minds of many, that each and every uterine flow is excessive and alarming.

A correct diagnosis is seldom if ever made in these placental presentations, until the placenta becomes partially detached by the expansion of the cervix or lower segments of the uterus. Indeed, we can safely say that the physician is never called upon to exercise his diagnostic powers until the patient is warned by either uterine pains, or the flow of blood. These cases are so extremely rare, when compared with the whole number of obstetrical cases, that no thought is given to the subject, and a physician may practice for a life-time without ever seeing a case in his own practice.

When called to treat these cases, you will generally find a change has already taken place in the os and cervix uteri; the os will be softer and more patulous than usual, and if at or near full term, a little dilated, or at least dilatable. Your finger will readily come in contact with the placenta if it be a central prævia, or even a partial one, and will be

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recognized at once by its soft and velvety feel. In doing this operation, you will be obliged to pass your finger, and sometimes your whole hand through clots of blood, if the patient has had a recent attack, but if not, the passage may be quite clear. You should make a pretty thorough examination, so much so as to thoroughly satisfy your mind whether it is a central prævia or not, so that you can go to work understandingly to perform one of the most arduous, and, at the same time, one of the most responsible operations which is ever assigned to the obstetrician. You will comprehend the importance of assuring yourself of the kind of presentation you have to contend with, when you understand that the treatment varies greatly.

When convinced the flow of blood is the result of a separated or detached placenta, and your patient in the sixth or seventh month of pregnacy, or even later, you should endeavor to save both mother and child; the life of the mother should always be your first consideration, and the safety of her offspring should be of secondary moment.

At this stage, the treatment will be the same, or nearly so, whether the implantation be central or otherwise. Enjoin absolute rest to both mind and body. Calm the fears of your patient by assuring her that there is little or no danger; administer a large opiate; apply cold and even iced water to the abdomen over the pregnant uterus, and even up the vagina to the very cervix itself. If this treatment does not arrest the flow of blood, the vagina should be packed thoroughly and completely with cotton wool, or other material saturated with alum water, or some powerful astringent. In most of these attacks, or at least a majority of them, the hemorrhage will be arrested whether we interfere or not, if it occurs before the full term. After the first attack and the flowing has been stayed, we should keep our patient as quiet as possible, and inform her or her intimate friends that there will probably be similar attacks before she is delivered. You now have stayed the first flow of blood, or assisted nature in her work in doing so; the life of the patient and the fate of the unborn babe is in your hands. When the time arrives for delivery, whether it be at full term or not, you will have to face the danger boldly or retire from the field with faded laurels.

We should naturally suppose that these cases which are of so grave a character, and too often fatal, would have advocates advancing different modes of treatment. Such is the case. Simpson, one of the foremost men of his time in obstetric science, believed that the hemorrhage was placental and not uterine, and therefore advocated the early separation of the placenta from the walls of the uterus, and its speedy extraction. In regard to his theory of placental bleeding, we believe the preponderance of evidence is opposed to it and in favor of the uterine. We believe,

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nevertheless, that the separation of the placenta, as advocated by Simpson, whether the hemorrhage be placental or maternal, is the true practice, provided the placenta is not planted too high up on the uterine walls; but if it is only a partial prævia, then its removal is rather a difficult operation, and your efforts will often result only in failure.

Of the five cases which have come under our observation, three of them were central implantations, or nearly so, and we experienced no difficulty in removing them in advance of the child, and without any delay. All the mothers recovered, and two of the children. Of the two cases where both mother and child survived, both were first attended by midwives, both had profuse hemorrhage, and in both cases the os greatly dilated, and therefore we experienced no difficulty in removing the placenta at once. In the other case of central prævia, the woman had been in labor, or at least flowing freely, for three days, in charge of an incompetent person, before our arrival. We removed the placenta at once, as in the other two cases, in advance of the child. This child was lost. In the first two cases the labor pains were very strong, and both were delivered within five or eight minutes after the removal of the placenta. In the one in which the child was lost, labor was not completed until half an hour afterwards.

We can hardly conceive how one can expect the child to be saved in those cases where the placenta is expelled or removed first, unless the pains are strong and soon complete the labor. This, fortunately, was the case in the first two cases, but not so in the third.

Would it not be good and wise practice, in those cases where we remove the placenta in advance of the child, to be in readiness with the forceps, and if there is any delay, apply them at once? The placenta being removed, the maternal supply, of course, is cut off, and any great delay is sure to prove fatal to the child.

In the other two cases where the prævia was not central, but partial, one mother was saved, but both children were lost; one of these, however, we have good reason to believe, had been dead some time before labor set in. In the one case, in which the mother survived, we attempted to arrest the flow of blood by the use of the tampon. In this undertaking we were only partially successful. There continued to be a loss of blood, which so weakened and prostrated our patient that we were compelled to perforate the head and remove the child at once, in order to save the life of the mother; but before attempting this grave operation, we endeavored to dilate the os for the purpose of introducing the hand and turning; in this we failed. The os continued quite rigid and undilatable, which compelled us to sacrifice the life of the child in order to save the mother. In all cases where the child is already dead, this is the best practice;

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because after perforating and introducing the hook, we, by making traction, completely arrest the flow of blood, by the pressure of the child's head, which acts as a perfect tampon.

In the one case where both mother and child died, we were not called until she had been in labor for at least seven or eight hours, and had lost, according to the expression of the midwife, "more than a gallon of blood."

This patient had lost a large quantity of blood, no doubt, before our arrival. Here, as in all the other cases, we gave stimulants in large quantities, also ergot; in addition to this treatment we also packed the vagina pretty firmly, in order to stay the hemorrhage; but all to no purpurpose,—the blood continued to flow, and finally we removed the tampon, brought down the feet and delivered. The placenta was delivered in due time, but the patient's strength continued to fail, and she finally died five hours after delivery.

This one case is the only experience we have ever had in turning in cases of this kind. So far as safety to the mother is concerned, it is far inferior to the perforator and hook, because by resorting to the latter we can at once arrest the flow of blood. Such, at least, has been our experience.

ACCIDENTAL HEMORRHAGE.

This is a form of hemorrhage to which all parturient women are liable, but the cases are rare indeed. It is called "accidental," in contra-distinction to "unavoidable" hemorrhage, which is the result of a malposition of the placenta.

In accidental hemorrhage, the fœtus is in the normal position and the placenta in its proper place, but owing to some injury, some accident, the placenta becomes detached from the uterine walls, and hemorrhage is the result.

It is surprising what slight causes will sometimes detach the placenta, or at least a portion of it, and thereby seriously compromise the life of the mother. It is probable, in some of these cases, that the adhesion between the placenta and the uterine walls is very slight, owing to a morbid condition of the placenta, but a very large per cent. of these cases are the result of accidents. When the placenta, or even a very small section of it, becomes detached through accident or otherwise, there will be uneasiness, slight pain, sometimes rigors, and occasionally fainting. Sooner or later blood will flow, and at last make its appearance externally. This flow may amount to but a few ounces, or it may be in such an abundance as to seriously endanger the life of the patient. These attacks may be repeated several times before labor pains become powerful enough to bring on delivery

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It is a matter of considerable importance to ascertain at an early date, the kind of hemorrhage with which we have to deal. In cases of accidental hemorrhage, on introducing the finger, we shall find the os very little, if any, dilated if called early, but if labor pains have actually begun, there will be some dilatation, sufficient to admit the finger readily; the finger will also come in contact with the membranes if we persist a little in our efforts, and not with any portion of the placenta. This form of hemorrhage is very frequently associated with some accident, but not so in unavoidable hemorrhage; but in most cases we shall have but little, if any, difficulty in distinguishing the kind of hemorrhage with which we have to deal, and can govern ourselves accordingly.

If there is such a thing as accidental hemorrhage in the early stages of pregnancy, we shall probably fail to discover it, because any accident or injury sufficient to detach the placenta, or any portion of it, would most likely be followed by hemorrhage, and abortion be the speedy and final result; but later on in pregnancy we shall have a more distinctive chain of symptoms, which will at first indicate internal or concealed hemorrhage, which afterwards will show itself externally; and which may or may not result in premature delivery.

In treating this form of hemorrhage, several things must be taken into consideration. If pregnancy be not too far advanced, we should try by all means to stop the flow and carry our patient to full term. Here we shall have to rely mainly on large doses of opium, in connection with the acetate of lead; acidulated drinks may also be of service. The utmost quietude should be strictly enforced in these cases. If your patient is in the eighth or ninth month of pregnancy, the cervix somewhat dilated, and the labor pains pretty strong, and no prospect of carrying her to full term, then it will be good and safe practice, if opium has failed to arrest the pains and stop the flow of blood, to administer a powerful dose of ergot. After administering the ergot, if the flow of blood should continue in such large quantities as to put the life of the patient in extreme jeopardy, it is the practice of many to rupture the membranes, bring down the feet, and deliver as speedily as possible. But in these cases, the same as in partial presentation of the placenta, where there is a continual flow of blood, the uterine pains weak and ineffectual, and the patient's strength very much exhausted, we are strongly in favor of perforating the head, and introducing the hook; by this line of practice, we can at once arrest the flow of blood, and in most cases save the life of our patient. In many of these cases the placenta will soon follow without any interference on the part of the obstetrician; but if this be otherwise, then administer a pretty powerful stimulant, combined with opium, and proceed at once to remove the placenta.

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ART. VIII.—ACUTE ANTERIOR POLIOMYELITIS (OR, INFANTILE PARALYSIS), WITH A REPORT OF THREE CASES IN CHILDREN.

BY DR. JAS. DORLAND, OF MILWAUKEE, MEMBER OF THE COMMITTEE ON PRACTICE.

Formerly, in heading this paper, it would have been superfluous to state that the cases occurred in children, but with the march of time, new discoveries are made, which cause us to reject old names and substitute new, and so it is with infantile paralysis. For years it was thought that only children were affected by it, and then the name was significant of the disease; but lately a number of cases have been reported occurring in adults. The pathology, which was also little understood, has been gradually cleared up, until now, the lesion is no longer a matter of question or doubt, hence the change of name. The name acute anterior poliomyelitis was first proposed by Professor Kussmaul, and it is now generally adopted both on the continent and in this country, in the place of the old and erroneous one of infantile paralysis. It is an acute inflammation of the anterior cornua of the grey matter of the spinal cord, either diffused or circumscribed, producing paralysis of the motor nerves arising there, thus causing wasting of the tissues supplied by those nerves, with loss of motion, and often contraction and deformity of the affected limbs. Any part of the spinal cord may become affected, but the lumbar and cervical portions are the most liable. The paralysis may be only slight, affecting a single muscle or set of muscles, or it may affect one arm or leg, or both. There is never any affection of the cranial nerves or head, which renders it evident that the disease does not extend to the medulla oblongata. There is no loss of sensibility.

The question whether poliomyelitis affects primarily the ganglionic cells of the anterior cornua, or whether the neuroglia, or interstitial cementing tissue, is first affected, is not yet settled.

Dujardien, however, has rendered it probable that both tissues become inflamed at the same time, and that the myelitis is both parenchymatous and interstitial. The microscope shows the whole structure to be inflamed. The neighboring tissues are seldom involved.

CAUSES.

These may be divided into predisposing and exciting. The only predisposing cause is age, and by far the greater number of cases occur in children under five, and of a full habit of body. The exciting causes

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are cold, and peripheral irritation of the nerves. Cold is very apt to be the cause in adults. That peripheral irritation may cause it has been fully proven by the experiments of Feinberg.

SYMPTOMS.

It is generally ushered in with a chill, fever, constipation, or diarrhœa, the fever often reaching 104°, and, if old enough, the child complains of its head and back. Or the child may go to bed and awake in the morning paralyzed, but I think this is exceptional. Several fits of eclampsia may take place, and although a fatal termination is said to be rare, I believe when the inflammation extends over a considerable portion of the cord, that death occurs oftener than we suppose. Then there is hyperpyrexia; the child appears to be paralyzed between the fits, sinks into a comatose condition, and dies of nervous exhaustion.

Anterior poliomyelitis of children is distinguished from other forms of spinal paralysis by there being no loss of sensation, no paralysis of the sphincters. It is therefore exclusively a motor paralysis. The affected limb is flabby and loose; it dangles about and assumes any position given it by gravitation. The joints become loose, and often there is incomplete dislocation. Sometimes the wasting of the muscles is hidden from the eye by the accumulation of fat. Sometimes the ends of the extremities swell somewhat, and are slightly cyanotic, and there is always a lowering of the temperature, from one to three degrees. There is only one method of testing the exact condition of the nerves and muscles, and this is all important, for upon that knowledge is based our treatment, and we are able to make a tolerably fair prognosis, without which we would have to be very guarded, that is by electricity. Both the induced or faradic, and the continuous or voltaic, are necessary, as the nerves and muscles respond to both forms of current in a different manner. Dr. Althaus in his little book on infantile paralysis, gives the most minute directions and the deductions to be formed from the application of electricity. I will merely give a synopsis of it. The indirect or faradic current should be applied first to the motor nerves, which is called indirect muscular faradization, and secondly to the tissue of the muscles themselves, or direct muscular faradization. In the former case, the negative pole is applied to the motor nerve, while the other is placed on some point at a distance. In health this causes contraction of all the muscles supplied by that nerve. This effect is entirely independent of the will of the person acted on. In direct faradization the poles are placed on the belly of the muscle to be examined. The effect is local.

When infantile paralysis is complete, and has lasted some time, the induced current is useless, for the muscles do not respond.

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We may, therefore, by this means alone, distinguish infantile paralysis from cerebral palsy, for in the latter the muscles respond for years after palsy has been established.

Where the loss of faradic excitability is complete, the muscles, unless specific treatment be immediately adopted, remain permanently paralyzed.

The constant current is the one generally used to test the excitability or non-excitability of the muscles. (*The nerves lose voltaic excitability in the same ratio and degree as they lose their faradic response ?*) But with the muscles it is different; for a while it diminishes, then begins to rise in the second week, and soon becomes exalted beyond the normal standard, so that the muscles respond to a current that would be ineffective in healthy muscles. But the healthy muscles respond quickly, while the paralyzed ones answer sluggishly and remain contracted while the current continues. Some years after the paralysis has become established, the voltaic current is the only means of showing that muscular tissue exists, a sluggish response being obtainaed by a considerable degree of galvanic force.

(*The reason that the voltaic current is superior to the induced is, that it is constant, while the induced is a number of quick currents in succession ?*) A feeble voltaic current which acts for a considerable time, has more effect than a powerful one which acts only for an instant.

TREATMENT.

In the acute stage, if the disease is recognized (which I think it rarely is), a febrifuge mixture, with saline cathartics, does good. Warm bathing, with warm applications to the back, are also beneficial. Ergot is spoken very highly of in this stage, as it is said to lessen the supply of blood to the cord.

Generally the disease will not be recognized until the fever is abated, and the mother attempts to get the child up, when she is astonished to see a paralyzed limb. Then I believe the only remedy is iodide of potash, and possibly small blisters along the spine would be of some benefit. After that has been continued, or even before, cod liver oil would be of great advantage, combined with friction of the paralyzed muscles, and bathing in tepid salt water, keeping the limbs clothed in flannel and exercising them as much as possible. Then, also, the induced current should be applied daily, for from ten to fifteen minutes, or, best of all, the voltaic current, if possible, should be used, and where the case is of long standing, and the muscles do not respond to a faradic current, it and cod liver oil, minute doses of strychnia, and, perhaps, steel, are our only hopes. When we look around us and see the number of deformed limbs, many of which could have been remedied by early

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treatment, it is all the *stimulus that should be required to make us attend carefully to them.* In giving the history of the three cases, I shall endeavor to avoid repetition by giving the previous history of each up to January 28th, 1880, and the treatment then adopted, and tabulate the measurements of each, so that the results can be more easily seen.

The three children are all of one family, and were very fleshy when infants. There is no history of paralysis or disease of the spine in either the father's or mother's family. The mother has, however, a peculiar anemic look, which I shall call a paralytic cachexia, and which is transmitted to the children under consideration. She has some eight children.

Sarah B——, age 8, when two years of age, had an attack of measles, which was very severe, and it was eight months before she fully recovered. Three or four months after her recovery, she was taken ill with scarlet fever of mild form. Was not confined to bed, nor was it followed by any of the sequela. About seven months after, was seized with a severe chill (which, as they lived in a malarial district, was thought to be intermittent), followed by a high fever, which lasted two days, and then, on attempting to move her, the paralysis was first noticed. The right leg was the one effected.

Her condition, January 28th, was as follows: The face had the peculiar anemic look spoken of; all the limbs and muscles but the affected ones well developed, especially the left leg, from the much greater strain on it. She felt well, bowels regular, and appetite good. Pulse normal. The paralyzed leg seemed to drag, the toes turned outwards, the foot rested on the inner half of the sole, and she was slightly knock-kneed; muscles wasted, including the gluteal, which are not affected in the other two children; circulation impeded, and temperature low. There was no shortening.

Carrie B——, age 4. Was called to see her in the early part of July, 1879, and found her with a temperature of 104°, pulse 120, tongue coated, and bowels confined. Gave a saline cathartic and aconite to reduce the pulse. The fever gradually became less, and at the end of four days was normal, and then the left leg was found to be paralyzed. She had previously been healthy, and was cutting no teeth at the time. As active treatment was not called for then, I put her on cod liver oil with the hypophosphites and small doses of strychnia, with tepid salt water bathing, friction to the paralyzed leg, and ordered her to be clothed in flannel. I was not permitted to attend the child further, and the treatment was soon stopped. In January she could scarcely walk, although they had made her exercise the leg as much as possible. The muscles were considerably wasted, and the foot turned outwards.

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Mark B——, age 1 year, 6 months. When eleven months old, had a severe attack of diarrhœa, which was thought to be due to bathing, and treated as such. It soon ceased, and was followed by paralysis of the right leg. I had watched him carefully, and the paralysis did not set in until the diarrhœa was checked, which was about three days from the time I first saw him. He was very fleshy, weighing at birth twelve and a half pounds. He was just beginning to walk, but as soon as paralyzed, would make no attempt. The mother feels satisfied that in the two last, the paralysis was due to cold. I did not treat the case further at that time, and he again came under my care in January. Was still very fleshy but flabby, and could not walk. Flexors of the toes very much contracted.

They were all ordered to have electricity applied, for from ten to fifteen minutes daily, with rubbing, and salt water bathing. Carrie took, in addition, Scott's emulsion of cod liver oil, with the hypophosphites.

The measurements of each were as follows: At the commencement I measured both the sound and paralyzed leg, and then took that of the paralyzed nearly monthly, and at the end measured the sound one again. I shall give the measurements in inches:

SARAH.	Thigh.	Above the Knee.	Knee.	Ankle.	Instep.
Sound one, Jan. 28th, 1880.....	14½	10½	11	7	8
Unsound one, Jan. 28th, 1880...	13½	8¾	8¾	6	7
" " Feb. 23d.....	13½	9	9½	6¼	7⅛
" " March 28th.....	13½	9	10¼	6¾	7¼
" " April 21st..	13¾	9	10½	6¾	7¼
Sound one, April 21st.....	15	11	11¾	7¼	8¾

CARRIE.	Thigh.	Knee.	Calf.	Ankle.	Instep
Sound one, Jan. 28th, 1880.....	11½	8¼	7	5	5½
Unsound one, Jan. 28th, 1880...	11	8	6¼	4½	4¾
" " Feb. 23d.....	11	8¼	7	4¾	5
" " March 28th.....	11⅛	8½	7½	5	5¼
" " April 21st.....	11¾	8½	7⅝	5	5¾
Sound one, April 21st.....	12	8½	7⅝	5	5¾

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MARK.	Thigh.	Knee.	Calf.	Ankle.	Instep.
Sound one, Jan. 28th, 1880.....	10	8	6¼	5¼	5
Unsound one, Jan. 28th, 1880...	9¼	7¾	5½	5	4½
" " Feb. 23d.....	9¾	8	6¼	5⅛	4⅞
" " March 28th.....	10	8¼	6¾	5⅛	5
" " April 21st.....	11	8½	6¾	5¼	5¼
Sound one. April 21st.....	11¼	8½	6⅞	5⅝	5½

RESULTS.

In Sarah's case, very little, if any, benefit to the muscles and arteries; the muscles scarcely keeping up with the natural growth of the sound one. The joints, however, got larger, and this may or may not have been due to the treatment. Can walk no better than before, and appears to be more knock-kneed.

Carrie, as shown by the measurements, has almost entirely recovered. In her case we have all that could be expected, for not only have all the tissues grown as fast as the sound leg, but they have gained what was lost by six or seven months of wasting. She can now walk perfectly, but when she runs it can be noticed that the leg is still a little weak.

Mark has improved considerably, and in time I am satisfied electricity will cure him. The flexors of the toes have not entirely relaxed, but there is a great improvement, and he is able to walk about as much as before his misfortune. I had a surgical boot made for him which aided him a good deal.

REMARKS.

No doubt, in Sarah's case, the addition of cod liver oil and the constant current, instead of the interrupted would have been a valuable one, but the length of time that elapsed from the invasion till treatment was commenced, leaves little doubt that the structural changes in the cord could not be altered for the better, and that all the good that could be done would be to prevent further deformity, and stop the waste of tissue. They were all treated with the induced current, the negative pole being held in the hand, and the positive passed up and down the spine, and over the wasted muscles. Dr. Althaus states that the negative should be applied over the sternum, but I do not believe it makes much difference, so long as when the connection is made the current passes through the cord. Some, after using it that

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way for a while, reverse the position of the poles, but I do not believe it is beneficial to do so. The results of the tests with electricity in children are not satisfactory, on account of fear, hence I cannot say positively whether there was much response in Sarah's case or not, but in the others it was plain, for I often gave them a strong current when asleep, with the effect of producing unmistakable contractions. These cases individually do not vary from others, but the fact of there being three cases in one family induced me to report them.

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ART. IX.—VERSION OR FORCEPS IN PELVES NARROWED IN THE CONJUGATE DIAMETER.

BY DR. GEO. SEILER, OF FOUNTAIN CITY, WIS.

In looking over the transactions of this society to find a theme in obstetrics which has not been brought up for discussion before its members, I have selected a most important question in practice, which has been warmly debated, and which is still undergoing discussion, because authorities of equally high attainments are not yet in accord in regard to it. Having had lately in my practice two cases belonging to this category, I am especially interested in this question, and shall try to bring before this society a resumé of the views and doctrines of the most celebrated obstetricians, both of this country and Europe. I may probably not bring anything new, but my intention is to bring up a discussion on the subject, and hear the views and experiences of the members of this society. In reviewing the works on obstetrics, and the essays written especially on this theme, I find such a difference of opinion that it is a difficult matter for an humble scholar to find a way out of this labyrinth of thoughts and facts, and to form an idea of what is the best treatment in these cases.

I shall not speak of generally contracted pelves, because it is a settled matter that the forceps are more suitable in these cases, and shall only consider such cases of dystocia, where the antero-posterior diameter of the pelvis varies from two and two-thirds to three and a half inches, that is in the so-called flat pelvis, where the promotorium projects.

Opinions concerning the question of leaving these cases to the natural powers, or of the value of forceps, or turning, to prevent the dangers attendant upon the head-presentations in narrow pelves differ, because isolated cases always require their special treatment. But this question has partially been and will finally be decided by the results of a sufficiently large number of observations from one and the same source, and of a sufficient list of cases treated on the same principles, and in which similar operative proceedings were used.

I shall here make some general remarks upon the history of forceps and version. The forceps were thought by me to be „ein unſchädliches Inſtrument, das durch Zug nach unten erſetzen ſoll, was durch die mütterlichen Kräfte, d. h. die Contractionen des Uterus von oben her nicht zu Stande kommt." Translated as near as I can: "The forceps are a harmless instrument,

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which by downward traction shall replace that which by the powers of the mother, viz., the contractions of the womb from above, is impossible." I did not hear anything in the lectures of my professors, that the forceps ever should be used as a compressor of the head to facilitate its passage through a narrowed pelvis; the forceps were only used as a compressing instrument in dead children, or after craniotomy. In generally contracted pelves, the forceps were contraindicated, therefore, according to the teachings of my preceptors. But the science and art of obstetrics is no *punctum stans*, it is a *punctum fluens*, and does not rest stationary where obsolete or obsolescent authors have left it. Thus we see that the indications for the application of the forceps are now plainer, and that this instrument is now used in a different way than has been done in former years. Some obstetricians, especially the late Professor Hodge, have become renowned by their teachings and art of performing operations with the forceps, but we shall see that not all authorities agree with him and his partisans.

Version—I speak here only of podalic version—was first mentioned by Paré, Guillemeau and Mauriceau, as a means of altering preternatural positions of the child, and preventing certain dangers for the mother and child; and the brothers Chamberlain, in the eighteenth century, gained their reputation not so much from the use of the forceps as from the operation of version, which in their days was little known. Influenced by their examples, Sir Fielding Ould (Treatise on Midwifery, Dublin, 1742,) taught his pupils that in contracted pelves, a delivery by podalic version is easier to the mother and safer to the child than forceps. His able contemporary, Paul de Wind, of Holland, vehemently proclaimed the inferiority of the forceps to version. But the partisans of the forceps prevailed, and the manual delivery in faulty pelves appears to have been forgotten until 1847, when the genius and enthusiasm of Simpson brought about its general revival. In Germany, while Osiander, Sr., preferred the forceps in flat pelves, and only in exceptional cases, in strong inclination of the pelvis, or presentation of the arm by the sides of the head, recommended version, Osiander, Jr., was the first to recommend version in an extended way. The number of partisans of version in Germany has been considerably increased lately, and the names of Braun, Schröder, Höning, Michaelis, etc., are added to their list.

Notwithstanding the weight of authority at the present day undoubtedly leans towards podalic version in pelves narrowed in their conjugate diameter, yet the question of its utility is still an open one, and this operation has not yet become an undisputed canon of obstetrics. Men of high standing in the profession, such as Byford, of Chicago, Martin, of Berlin, Spiegelberg, of Breslau, Radford, of Manchester, Dun-

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can, of Edinburgh, and Depaul, of Paris, look with disfavor upon it, while the great mass of the profession on this continent, influenced by the teachings of Hodge and Meigs, and by their own unrivalled skill in the use of the forceps, regard a safe delivery of the child to be impracticable whenever the instrument fails to extract it. The latest advocates of version are Prof. Goodell, of Philadelphia, Dr. Taylor, of New York, and Prof. Schröder, of Berlin; and we shall see how the questions concerning this matter have been decided at the international medical congress, at Philadelphia, in the year 1876.

Let us now see what our distinguished authors say for and against forceps and version. I shall principally give the views of the different authors as to the practicability of one or the other operation.

The strongest advocate for forceps in this country is undoubtedly the late Professor Hodge, of Philadelphia. In speaking of the management of labors in pelves contracted in the conjugate to three and three and a half inches, he proposes, first, to leave such cases to the natural efforts, and, second, to assist the delivery by means of the vectis or lever. Both these proposals we have to pass as not pertaining to our subject. The third proposition is to employ the forceps. He does not use the forceps in the sense of the German school as an extractor only, but as a compressor also, and tries to prove that the head of the child can be compressed to the extent of 3–8 lines without harm to the child. He uses the long forceps, and sometimes before the head is engaged, or what the Germans call "zangengerecht." He shows us how to apply the forceps in some cases to the sides of the head, in others over occiput and forehead, or face of the child. He says the two objections to this last manner of applying the forceps, injury to the features of the child and diminishing of the fronto-occipital diameter, are not proved; he thinks that if any enlargement of the diameters of the head is caused, it probably is in the cervico-bregmatic. He is contradicted in this by Simpson, who dwells much upon this last objection. He further says that the compression don't last very long, for as soon as the parietal protuberances have passed the margin of the superior strait, the difficulty is over. In late years he abandoned this manner of application, and embraces the head of the child in an oblique way, and shows the advantage of this mode of application, and the rules which must be observed to accomplish the operation in a careful and scientific way.

The fourth mode of assisting deliveries through a contracted pelvis is by the operation of podalic version. He says: "Prior to the introduction of the forceps, version was very frequently resorted to, under the hope of preserving the life of the child in cases of deformed pelvis, where the practitioner had no other resource than the terrible operation of

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embryotomy. Since the happy invention of the above valuable instrument, turning has been less employed and the lives of many children have been saved which would have otherwise perished by craniotomy.

"It has been considered a settled practice, founded on theory and experience, that version should never be advised, either for the sake of the mother or child, in contracted pelves; and it was always thought very unfortunate, if, in cases of such deformities, the child should present the pelvic extremity of the fœtal ellipse at the commencement of labor. We must dissent from the conclusion that version in a contracted pelvis is safer for the child or the mother than the delivery by the forceps." On this point the different authorities disagree. He further says: "The first coming head adapts itself better to the pelvis than the after coming head. He contradicts the opinion of Simpson and others, that the head flattens on the contracted brim, and shows that the effect of the bearing down efforts upon the head of the child is a diminishing of the biparietal diameter."

He further says, "flexion of the head is increased in cases of contraction of the superior strait. Hence, instead of the flat surface of the top of the head being first engaged, we shall have the occipital protuberance followed by the bis-occipital diameter, measuring two and a quarter inches, and eventually by the biparietal; measuring three and a half inches. Experience confirms this, as in all cases of protracted delivery, the head is lengthened in the direction of its occipito mental diameter and diminished in the direction of its transverse diameter.

"Comparing, therefore, the presentation of the base of the cranium with that of the occiput, there is no mechanical advantage in favor of the former. On the contrary, as the superior part of the cranium is more compressible than the inferior, the biparietal diameter will be more readily diminished in presentations of the occiput than in those of the base of the cranium. We object, also, to the declaration that the base of the cone of the head should be located at its superior part; the real base is at the occipital extremity, and, of course, its apex is the chin and not the base of the cranium. If, therefore, pelvic deliveries be properly conducted, it is the chin which enters first into the cavity of the pelvis, followed by the bimolar, bitemporal, and eventually by the biparietal diameters, the bimastoid being very slightly concerned. If, however, traction is improperly made through the medium of the neck alone, then the base of the cranium, as represented by the bimastoid diameter, will be brought down first. In artificial pelvic deliveries, the force applied must be through the medium of the spine; hence, as is well known, there is great difficulty in maintaining the flexed condition of the head. This difficulty will be particularly great in contracted pelves.

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Powerful traction made, therefore, on the body of the child, will cause the posterior part of the head to descend more rapidly than the anterior. Hence the chin departs from the breast, and the occipito frontal diameter will become involved instead of the cervico-bregmatic, greatly aggravating the difficulty of delivery, and demanding, therefore, that great force be applied by the hands of the accoucheur and his assistants.

"The necessity that the delivery should be rapid in these pelvic cases, constitutes another serious objection to version. If there be any delay, the child perishes from suspension of the placental function. The great danger is enhanced by another fact, too generally overlooked in treating of the operation of podalic version, viz: the usual suspension of the placental function, from the diminished size of the uterus. The fact that there is no necessity that the operation should be rapidly completed, inasmuch as the functions of the cord and placenta will not be disturbed, as in cases of podalic version, speaks also in favor of forceps operation. It may be further added that the operation by the forceps can be resorted to at any period of the second stage of labor, however long may have been its duration; while the operation of version must necessarily be restricted to the earlier periods, as no prudent practitioner would force his hand into the uterus when this organ is rigidly and unremittingly contracted upon the body of the child."

Thus far Hodge. We see he was a hardy advocate of the forceps, and, a strong opponent to version in contracted pelves, he makes only this remark: "There is probably no educated practitioner who would hesitate to adopt version, if the forceps were not at his command."

Playfair says: "The choice of treatment, as between version and forceps, in cases in which the pelvis is contracted, has been and still is one of the most vexed questions in midwifery." He shows that sound judgment and freedom from partisanship are guides where authorities differ and opinions are conflicting. He states the question briefly and clearly, and makes some admirable remarks upon the necessity of giving time for the process of molding the child's head to go on, and the mistake of interfering too soon.

In speaking of the forceps, he considers it generally applicable to all cases where the diameter of the conjugate is about three and a quarter inches. He says: "It is very likely that the forceps do not act equally well in all cases. When the head is loose above the brim, where the contraction is chiefly limited to the antero-posterior diameter, and there is abundance of room at the sides of the pelvis for the occiput to occupy after version, and when, as is usual in these cases, the anterior fontanel is depressed and the head is placed in a very oblique position, it is probable that turning may be the safer operation for the mother, and

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the easier performed. When, on the other hand, the head has engaged in the brim, and has become more or less impacted, it is obvious that version could not be performed without pushing the head back, which may neither be safe nor easy. That delivery is often possible by turning after the forceps and the natural powers have failed, and when no other resource is left but the destruction of the child, must, I think, be admitted by all, for the records of obstetricians are full of such cases.

"The original choice of turning is a more difficult question to decide. My own experience is that the forceps will generally be found to be the preferable operation of the two, except, perhaps, when the head refuses to enter the brim and cannot be sufficiently steadied by external pressure to admit of the easy application of the instrument. An argument used by Prof. Martin, of Berlin, in reference to the two operations, should not be lost sight of, as it seems to be a valid reason for giving preference to the forceps. He points out that molding may safely be applied for hours to the uterus, but that when pressure is applied to the important structures about the base of the brain, as, after turning, molding cannot be continued beyond five minutes without proving fatal. This, however, is no reason why turning should not be used after the forceps and the natural efforts have proved ineffectual."

These arguments of Prof Playfair are, as we readily see, true deductions from practical experience. We will now turn to another English authority. Prof. Simpson says:

"On reading cases of contraction of the pelvis, I was struck with the fact that the labor in certain malformed females was much easier and more fortunate when the child had presented the feet than when the head was the first to offer, although in some instances, the bones of the cranium have yielded and been indented to the extent of six or even twelve lines. In several cases even, which would have required craniotomy, the presentation of the feet, or pelvic version, enabled me to effect the delivery in a succeeding pregnancy."

Dr. Simpson asserts that the child's head is more compressible if it presents the base at the commencement of labor in these deformed pelves, than if the vertex descends first; regarding the head as a cone, the base of which is the top of the head and the truncated apex is below. Hence he says that when the child is delivered footling, the bimastoid diameter becomes first engaged, and the compression of the head will be gradually made, owing to the inclination of its sides, until it reaches the parietal protuberance, giving all the advantages of a wedge. If, on the contrary, the top of the head descends first, a broad surface is immediately presented at the superior strait, which cannot directly enter, and hence is pressed against the sides of the aperture, increasing instead of

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decreasing the biparietal diameter. Prof. Simpson has some more arguments in favor of version, but we will pass these and hear now the French authorities.

Madame Lachapelle: "According to my tables, of fifteen children delivered by the forceps, on account of contracted pelvis, seven lived and eight perished, whilst of twenty-five delivered by the feet, fifteen survived. The proportion of success is, therefore, two-thirds for version, and rather less than one-half for the forceps. These fortunate results of version are doubtless due to the greater facility with which we are able, whilst drawing upon the pelvic extremity, so to direct the head of the fœtus as to place its transverse diameter in correspondence with the shortened antero-posterior one. When, on the contrary, the head presents first, it is, in fact, generally situated transversely; but it may possibly occupy much more unfavorable positions, and those, too, of a kind which the forceps are incapable of altering." Version, to Madame Lachapelle, is also preferable to the use of the instrument, when the inferior strait is contracted transversely and the pubic arc is narrow and angular.

What does another French authority, Prof. Cazeaux, say on this question?

"The ultimate limit to which we restricted the use of the forceps was three inches. The enlarged experience of Baudelocque has proved that when the forceps is applied in the direction of the biparietal diameter, the greatest reduction obtainable without compromising the child's life is not more than half an inch. Now this diameter on a well-formed head averages from three and a half to three and three-fourths inches, and even supposing that we can reduce it half an inch, there will still be left three inches at least. When the pelvic diameter exceeds three inches, the forceps may prove very useful. The forceps merely act here as an instrument of traction."

When the smallest diameter of the contracted pelvis is less than three inches, we are still almost obliged to try the forceps before having resource to craniotomy, etc., and it has several times been the means of extracting a living child through a diameter of but two and three-quarter inches, for example.

"But are the forceps the only resource left, before having recourse to a bloody operation in cases of contracted pelvis? We long thought it was, and notwithstanding the impression made upon our mind by the perusal of the observations of Madame Lachapelle, we shared on this important particular point, the opinion of the majority of French accoucheurs, and proscribed pelvic version in cases of contracted pelves, except in the oblique oval variety (Naegele's), in which it was admitted by all to have undoubted advantages."

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After citing the teachings of Simpson and Madame Lachapelle, and after some remarks of his own, he comes to the following conclusions:

"If regard be had to the interests of the mother, version, as affording opportunity to act immediately after the membranes are ruptured, should be preferred; but is the case the same as respects the fœtus? If we compare the results of podalic version with those of embryotomy, the reply is ready, for the facts mentioned by Madame Lachapelle and some other authors, afford us at least the hope of sometimes saving the child by turning, whilst its death is the inevitable consequence of any other operation.

"But do not the forceps, within the rational limits which we have fixed for their employment, afford greater chances to the fœtus than the extraction by the feet? Madame Lachapelle, Dr. Radford and Prof. Simpson, do not hesitate to declare for turning. Notwithstanding the facts collected by the illustrious midwife, and whilst admitting, with the English accoucheurs, that the compression is less dangerous to the fœtus when exerted on the sides of the head than when its tendency is to shorten the occipito-frontal diameter, we confess that we cannot share their preference, when the top of the head presents in a favorable position. The arrest of the base of the cranium above the contraction, the possible extension of the head, the stretching of the cervical region to which the tractions made on the body necessarily expose it, the possible compression of the umbilical cord during the time occupied in the extraction of the child, are, indeed, very unfavorable circumstances for the latter, and, unfortunately, greatly to be feared during version. But when, with a shortened diameter of three and a quarter inches, there coincides an unfavorable presentation, as that of the face or trunk, and when, before the application of the forceps, it is first necessary to perform the cephalic version; or when, the top of the head presenting, it is so situated that its longitudinal diameter corresponds to the contracted one, we are of this opinion, and prefer podalic version to the use of the instrument.

"When the antero-posterior diameter of the pelvis amounts to but from two and three-quarters to three and a quarter inches, and the child, being still alive, is placed in the conditions just mentioned, we also think that version should be preferred. If after several fruitless attempts made with the forceps upon a favorably situated head, the heart is heard to beat distinctly and regularly, we should, if the pelvis has at least two and three-quarter inches, attempt the pelvic version before resorting to craniotomy.

"To recapitulate: when the pelvis has at least two and three-quarter inches in its sacro-pubic diameter, the forceps should be used if the top

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of the head presents in a transverse position. The pelvic version should be preferred: 1st, in direct antero-posterior positions; 2d, in inclined or irregular position of the top of the head; and, 3d, in face or trunk presentations."

Thus speaks Cazeaux representing nearly the doctrines of the latest school.

Now let us hear some of the representatives of the German school.

Dr. Borinsky, in the Archiv. für Gynæcologie, 1872, has arranged in a table the births with contracted pelves in which the head presented, and which terminated spontaneously, with those submitted to operation, and has compared with these the births in which turning had been practiced. He shows that about 58 per cent. of the fœtuses died during or after turning, while not more than 30 per cent died after all other methods of parturition. It remains certain, therefore, that one, in order to preserve the fœtus, should never have recourse to turning as a prophylactic measure, and that to justify this proceeding, a decided and prominent danger must be present. The pelvis contracted only in the conjugate affords the relatively best prognosis; if, however, the conjugate is under eight centimeters, the conditions are analogous to those of general contraction.

With abnormal deviation of the head towards the anterior or posterior wall of the pelvis, the so called anterior or posterior-parietal-presentation delay is dangerous. The former position of the head dependent on a high, steep anterior wall of the pelvis, is not only a great obstruction to the course of the labor, but is, moreover, fraught with dangerous results to the mother. Whilst the flat posterior portion of the parietal is forced deeper into the pelvis, the anterior portion may be held back by the steep anterior pelvic wall; before it can pass, which it seldom does, this portion of the bone must be subjected to crushing force to the detriment of the mother. The best means of altering this position is to turn. Less dangerous is the anterior-parietal presentation, in which a high standing promontory, generally associated with a flattened anterior pelvic wall, that holds back the head bent towards the trunk at an angle open posteriorly, so that the exploring finger feels the anterior portion of the parietal bone closely applied to the pelvis. In instances of long continuance of this condition, it becomes necessary to have recourse to turning in order to remove the persistent parietal pressure and to bring on delivery.

Prof. Spiegelberg, of Breslau, in his latest work on obstetrics, estimates the importance of the study of deformed pelves, and their treatment very high. He makes the declaration, that the doctrine of the contracted pelvis rules the obstetrical clinic at present, and for the most part constitutes it.

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The recognition of this importance is essentially the conquest of the last decade and made almost entirely by German obstetricians (?) He says first: "a deleterious influence is exercised by a contracted pelvis upon all the factors of labor, and these are to be considered quite as much as the mechanical obstacle to the childs' progress, especially when the contraction is moderate in degree, for no relation can be established in such cases between the duration of the labor and the amount of contraction. The high degree of contraction excepted, it is never the measure of the contraction which decides the course and result of the labor."

Then he speaks of the special mechanism of these labors—the entrance into and the passage through the pelvis—and considers a thorough investigation of the form of the pelvis, and the degree of contraction under chloroform narcosis, and by the passage, if necessary, of the whole hand, the first and indispensable requisite, as to form an idea, what line of conduct has to be followed in special cases.

Then as to the management of the labor: "Wait, wait and watch, so long as the spontaneous passage of the head appears possible and devoid of danger. When longer waiting, in view of the safety of the mother, is no longer permissible, perforation and extraction with the cranioclast, if the head is high up, the forceps, if it has been forced through the contraction (nach überwundener Beckenenge) and the child be living. In unfavorable positions of the head, its engagement not taking place after reasonable delay, version and extraction. * * * * The child's life, in comparison with that of the mother is always to be lightly estimated; every operative procedure endangers it in a high degree; by spontaneous delivery it fares the best on the average; interference has to come when symptoms of danger to the mother, or of threatened fœtal asphyxia appear."

We see that he only applies the forceps when the head is not only engaged, but fully descended into the cavity of the pelvis; if the head does not descend he applies the perforator.

Version he only recommends in cases when the head does not engage in the pelvis, but remains movable above the brim, or only pressed firmly down upon it, and the pelvis must essentially be a flat one; he recommends the operation not as a premature interference with the mechanism, but for the purpose of changing the position, as in transverse positions. According to him, version is never to be made as a prophylactic operation, but only when it appears better than waiting, a probable waiting for more satisfactory pains, or the adaptation of the head to and engagement in the passage.

Prof. Hildebrand, of Königsberg, Prussia, thus expresses himself on this subject:

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"1st. In pelves of 6.5 ctm. conjugate and upwards, the accommodation of the head to the pelvic cavity is patiently waited for and facilitated by maintained uterine activity, observing the proper lateral decubitus. Should symptoms supervene which indicate the inability of nature to expel the child, or which call for a speedy delivery, the perforation even of the living child is performed, and the forceps and version employed only in exceptional cases, now to be specified.

"2d. As a rule, both forceps and version are procedures but little adapted to conduct the head through a contracted pelvis, and, if forcibly employed, dangerous and fatal to the mother and child. It is evident that the proper plan to overcome the obstacle of a narrow pelvis, is to seek to produce the most favorable mechanism for the passage of the head, and not drag it forcibly through, either with the forceps or the hand after version. The rational method is to study the various ways in which the head adapts itself to the different forms of pelvic contractions, and then endeavor in each individual case to favor the natural mechanism. But neither the forceps nor version are suitable for this purpose. Although at first sight version would seem to answer this requirement, such is not the case, for the mere placing the head with its smallest diameter in the contracted conjugate, by no means causes the easy delivery of the head, which is usually attended with the greatest difficulty and danger to the child; and here is the great objection to version in these cases. Expulsion of the head by manual pressure over the symphysis is advisable and useful in normal non-contracted pelves, but pelves with any degree of contraction would require the exhibition of so much force as inevitably to injure and crush the uterine tissue; and as for the removal of the head by traction on the shoulders or face, it is an absolutely dangerous procedure for the child in a distorted pelvis.

"3d. Version is indicated in a lax, unirritated uterus, especially if the membranes be still intact or have only just ruptured, in cases where, beside the narrow pelvis, conditions are present which prevent the normal entrance of the head into the brim (pendulous abdomen, excessive pelvic inclination, with anteversion of the uterus, physical weakness of the uterus), or necessity of speedy completion of labor (deep seat of the placenta and flooding, eclampsia, etc).

"4th. The forceps are to be applied to the presenting head under the above indications, when the head has already nearly passed the contracted plane of the brim, and the bitemporal diameter has entered the pelvic cavity, and only slight force is required to overcome the remaining impediment. In any case where an experienced hand has failed to overcome the obstacle at the brim with three steady tractions, the forceps should be discarded and craniotomy at once performed.

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"5th. After having been a firm advocate of version for a number of years, because he preferred it to the dangerous forceps and cephalotribes, Hildebrandt has now arrived at the conclusion that forceps and version both have but a very limited range of utility and safety in the management of dystocia in distorted pelves, and has adopted the practice, supported by theory and experience, of leaving the delivery, even in the higher grades of pelvic deformities, to the powers of nature, merely taking care to regulate the contractions of the uterus and the mechanism of the presenting part, and resorting, when necessary, only to craniotomy, with or without subsequent extraction. If subsequent extraction is necessary, he is decidedly in support of the cranioclast."

I will now turn to the investigations of this matter by Prof. Goodell.

In a paper read before the Philadelphia Obstetrical Society, Prof. Goodell shows us a new plan of conducting labor in narrow pelves. He first speaks of the arguments which are in favor of the forceps, and then of those which are in favor of version, after that, he explains his mode of delivery by version.

He says: "The advocates for the use of the forceps in narrow pelves contend,—1st, That the neck of the child cannot sustain much traction, and that, consequently, the degree of tractive force which can be safely executed by the forceps, far surpasses any extractive power which can be brought to bear upon the after-coming head.

Five questions at once suggest themselves here:

What amount of traction on a child's neck is compatible with life?

What amount without decollation?

What amount of extractive power can be brought to bear upon the child as a whole?

What is the mode of traction?

What is the limit of conjugate narrowing through which an average sized head can be made to pass?

We have the following data on the first question:

The neck of a mature infant is found by Mathews Duncan, a strong opponent to version, to be capable of sustaining an average weight of 105 pounds before the spinal column yields, and one of 120 pounds before the body parts from the head.

These averages seem to me to be underrated, as I have on several occasions delivered living children after throwing on their necks a weight of 130 pounds."

Joulin, also a warm partisan of the forceps, after putting on the feet of three dead children a steady tractive power, respectively 125, 145 and 148 pounds, had dragged their heads through an artificial pelvis without breaking their necks. A remarkable instance is cited, in which a well

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known physician, by bearing his feet against the woman's person, has exerted his utmost strength on the neck of a child without any lesion whatever. Further, it must not be overlooked that the neck of a living child is presumptively stronger than that of a dead one. For aside from the vital contractibility of the muscles and the ligaments, there is on the part of the child an invariable resistance to traction. This answers the first paragraph.

2d. That during traction by this instrument, moulding of the head is a gradual process, and may go on in safety for an indefinite length of time. But after version, moulding cannot take place, because death ensues if the delivery is not very rapidly effected.

3d. That when version fails to deliver, the subsequent operation of craniotomy or of cephalotripsy is a more difficult one than when the forceps fails.

These are the stock arguments against version, and the last two will be examined presently. "But the main reason which, I think, influences the profession at large against this mode of delivery, is their habitual ill luck in ordinary breech cases, and also their fear lest the neck should part, and the head be stalled in the uterine cavity."

The arguments in favor of version may be summed up as follows:

1st. In cephalic presentations the head usually lies in the transverse diameter of the brim, and does not tend to dip. It presents by its vault, which is therefore flattened out and made broader by the resistance of the brim.

2d. The forceps, as generally applied, catches the unflexed head usually in the occipito-frontal diameter, exceptionally in the fronto-mastoid diameter. In either case the compression made by it causes the head to bulge out laterally, hence, to overcome the mechanical disadvantage, very great brute force is needed.

3d. When the promontory of the sacrum is laterally displaced and the brim unsymmetrical, should the vertex present in the contracted side of the pelvis, it may, by traction on the proper foot, be turned around and brought into relation with the more roomy side.

4th. By version the small end of the cranial wedge, viz., the unyielding base, is the one which first enters the brim. From this mechanical advantage there is gained a maximum of lateral compression of the upper, thinner and wider portions of the skull; in other words, the bones bend in and overlap better.

5th. Clinical observation conclusively proves that the unflexed after-coming head is nipped, not in its biparietal diameter, but in the small end of the fronto-parietal cone or wedge, viz., the bitemporal diameter, which is from half an inch to three quarters of an inch shorter. The

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biparietal diameter passes through to one side of the conjugate diameter. From this mechanism of descent less extractive force is needed, and the time necessary for delivery is thereby much abridged.

6th. The bilateral compression gained by version is the least dangerous to the life of the child. On the other hand, the occipital blade of the forceps may destroy life by pinching the cord when coiled around the neck, or by too great and too prolonged a pressure on the medulla oblongata.

7th. The jutting promontory so protects the cord from pressure that after version the necessity for immediate delivery is not so urgent as in ordinary breech cases.

8th. The child's neck can sustain with impunity a very great strain, and if to this be conjoined, by the hands of an assistant, a propelling supra-pubic pressure upon the vault, fully as great an extractive power can be brought to bear upon the after-coming head, as by the forceps in head-first labors.

9th. Provided the brim is wide enough to admit the hard base of the skull, the operation of craniotomy or of cephalotripsy is quite as easy in the one as in the other mode of delivery. The brain can be reached by perforating the roof of the mouth; the skull behind the ears; or, what is the point of election, the suboccipital region. Moreover, the base can be more readily grasped and crushed by the cephalotribe. When the brim will not admit the cranial base the difficulties attending craniotomy and cephalotripsy are perhaps greater, but by no means insuperable.

10th. Since, by version, the narrow conjugate is traversed more quickly, the passage of the child's head is attended with less risk of injury to the mother's tissues.

11th. After craniotomy, turning is often a very efficient way of completing the delivery.

We now come to Prof. Goodell's management of head-last labors, and his manner of extraction. Here he shows us that by the conjoined use of two nearly equal forces, viz., that of supra-pubic pressure by the hands of an assistant, and that of traction on the body of the child by the physician, there can be safely brought to bear upon the hind-coming head an extractive force fully as great as that by the forceps on the fore-coming head. The supra-pubic pressure possesses another helpful property besides that of propulsion. If directed downward and backward, as it should be, it flattens the head bilaterally against the sharp edge of the promontory and aids in the process of molding.

If, now, an extractive force, fully equal to that of the forceps, be added, the great mechanical advantage gained by getting the small end of the wedge, viz., the cranial base, to enter the inlet; and also that

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gained by the engagement in the conjugate of the small and very compressible bitemporal diameter; and if to these very substantial advantages be super-added the telling mechanism of delivery by version, by which only one small portion of the skull is compressed, and that where most needed, viz.: in the offending diameter itself of the child's head, while by the forceps the compression is diffused over large surfaces, on unimplicated diameters, and consequently in more or less direct antagonism to the line of compression made by the symphysis and the promontory, it follows that the weight of argument in favor of the manual over the instrumental operation is overwhelming.

Notwithstanding the cited facts show the wonderful tensile strength of the fœtal neck, and the great amount of force that can safely be used to extricate the after-coming head from the grasp of the brim, it is of importance to exert the power of the best mechanical advantage and to grade it to the resistance. This brings me to the mode of making traction.

In the first place, the woman's hips should be brought slightly over the edge of the bed, and each leg supported by an assistant. My reasons for this position in preference to the lateral one, are: That supra-pubic pressure is then better made by the hands of a third assistant, or by the free hands of the two assistants. That very few physicians, while bending forward in front of the woman thus placed, can exert a steady force of one hundred pounds upon the neck of the child, and finally, that the upper hand of the physician can then force the neck into the hollow of the sacrum, and thus make the line of traction somewhat behind the axis of the superior strait.

In a brim narrowed in the conjugate, the sacral side of the after-coming head is bent in and fixed by the jutting promontory. Hence, as Barnes has shown, the extraction of the head as a whole can take place only when its pulvic side revolves around the promontory, and descends over the symphysis pubis; in other words, the head must be warped around the promontory. Bearing this fact in mind, it is important, after version, that the sacral side of the head should be caught at a point as near as possible to its vault. To gain this end, the physician, after grasping the nape of the neck with one hand and the ankles with the other, should make his first movements of traction in the axis of the outlet, for then the pubic side of the head will be tilted away from the inlet, while the sacral side will proportionally descend over the promontory and front the brim. This canting of the head can be very materially aided by the free hands of the assistants, who will make very firm downward and forward pressure upon the vault of the head through the now flacid abdominal walls. By these manœuvres the sharp promontory is made to indent the sacral side of the head at a point still higher up and

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nearer to the vault. Hence, the arm of the lever, measured by a line drawn from the base of the skull to this fixed point, will be correspondingly lengthened, a mechanical advantage not to be overlooked. If now, without for a moment remitting but rather increasing the traction, its direction be reversed, and the child's body be swept backward upon the coccyx — the neck being also forced downward and backward into the hollow of the sacrum with all one's power—the sacral side of the head becomes bent in, and the pubic side is made to revolve around the promontory, and descend with the least expenditure of power. Apart from the leverage thus gained, and the shorter arc thus described around the promontory as the centre of motion, I am not sure but this manœuvre will, in very narrow pelves, so cant the cranial base as to get it below the sharp edge of the promontory.

Whenever this mode of traction fails at once to release the head from the grip of the brim, or the difficulty lies rather in the size of the head than in the narrowness of the pelvis, I have on several occasions, especially in original head-last labors, found a pump-handle movement very efficient. Made with steady and unremitting traction, and aided by supra-pubic propulsion, it will cause each side of the wedge-shaped head to descend alternately. The range of oscillation should extend from the axis of the outlet anteriorly, to very firm pressure on the coccyx posteriorly. With a very sharply jutting promontory, this up-and-down movement does not usually succeed, unless the parietal bone has been depressed as a whole, or broken in, and not simply indented. Otherwise the sacral side of the head is held fast, and the pelvic side will then librate around the indented, and, therefore, fixed point, merely rising and falling, without any onward progress whatever.

As soon as the unflexed head has passed the brim, which it usually does with a well-marked jerk, it is brought into relation with new pelvic diameters. Flexion and rotation now spontaneously take place, and the line of traction must be changed to that of the outlet. And when, finally, the head is about to clear the bony canal, the body of the child should be raised up in front of the pubes, and traction made in a line at right angles to the mother's body.

So long as the cord beats, or other signs of life are present, there must be no remission whatever in the extractive efforts of the physician. But if, after the head has become well jammed in the brim, the child is found to be dead and its delivery proves to be a difficult one, due moulding time may be given. From theoretical and clinical deductions, two broad rules for guidance in turning may, I think, be laid down: first, that the brim must be narrowed mainly in its conjugate, and, second, that a brim which can admit the unyielding base of the skull, is traversable by the crown.

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After having already finished my essay, I was happy to receive the latest edition of Prof. Schröder's work on obstetrics (1880), and we will now see what he says on this subject:

Prof. Schröder has availed himself of the latest teachings as to deformed pelves, and we may look upon them, therefore, as the result of the recent study of the pelvis, or certainly as the position of the German school of obstetrics at present. In speaking of the management of labor in flat pelves, he says: "So long as the head is not so fixed that the hand in chloroform narcosis can pass it, version is indicated. If it be no longer possible, the master of his art may apply the forceps, and by suitable, even though powerful traction, attempt to bring the head entirely through. If the attempt does not succeed, he will know when to lay aside the instrument. But the beginner pulls when the head does not follow; when the sweat of anguish breaks out on him, when he stands in fear of shame from the spectators, he pulls away, harder and harder, and at last makes the harmless forceps the most dangerous instrument of all.

"The forceps should only be applied when the obstacle has been wholly or, at least, almost wholly overcome by the natural powers. In most cases the head will by the forces of nature be expelled, but it happens in exceptional cases, that the latter, in forcing the head through the narrowed space, are exhausted, and the head is retained in the cavity of the pelvis for a longer time. Then the forceps are in their right place, then they are the harmless saving instrument, but then they are not used on account of the flat pelvis, but on account of the failing contractions of the uterus."

In primiparæ, where the diagnosis of a flat pelvis has already been made, he advises version as soon as the membranes have ruptured and the cervix is sufficiently dilated. In pluriparæ, when, from measuring the pelvis and the course of former labors, we can conclude that the mechanical impediment is not too great, he advises expectancy, especially if the bag of waters is not yet ruptured. If, after the membranes have ruptured, the head does not engage in a favorable position, then he resorts to version without hesitation, because he don't know the size of the child's head, which is essential in judging of the impediment. If, on the contrary, he finds that in former labors children of medium size have been delivered only with great difficulty, he advises immediate version. His reasons why the after-coming head passes the flat pelvis easier than the first-coming, are the same as Prof. Goodell's. From the good results obtained by different obstetricians in the extraction of the after-coming head by the manipulations of Veit, he expresses the opinion that the danger for the first-coming head in a flat pelvis is greater than

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for the aided after-coming head, and that the assertion that the gradual configuration or moulding of the first-coming head is more harmless than the dragging of the after-coming head through the pelvis, is contradicted by experience.

COMPARISONS.

In comparing the teachings of the different authorities in obstetrics on this subject, we find that the opinions differ principally in the following questions:

1st. How does the head enter and pass the brim in the flat pelvis? and,

2d. How does the after-coming head behave in the flat pelvis?

3d. What effect has instrumental interference on the mechanism of labor in such pelves?

4th. Has turning any mechanical advantages over the use of the forceps?

In all these questions there is a difference of opinion; but the first two questions, I think, depend principally upon the acceptance or non-acceptance of the common doctrine of the initial flexion of the head, or, in other words, whether the first-coming head engages or can with the forceps be made to engage with more favorable diameters in the contracted pelves than the after-coming head. The doctrine of the initial flexion of the head, as taught by Hodge, and others, is now contested, and the conclusions are arrived at, that the unaided first-coming head and the aided after-coming head observe, in a flat pelvis, precisely the same general laws of engagement and of descent, hence, version means art plus nature. In regard to the third question, Prof. Hodge says that the forceps help in moulding the head, and Prof. Goodell and Schröder say they interfere with it; the German and English accoucheurs teach that the forceps should be a harmless instrument, never act as a compressor on a living child, but only as a tractor, and I think they are right; as the first-coming head generally engages in a transverse position, and the biparietal application for the forceps not only is not applicable and difficult, but dangerous (the best application would be an oblique one, viz., the fronto mastoid), we can see that the forceps have no advantage over version, especially in cases with a conjugate of —3 inches. It is conceded that at or above the brim of a flat pelvis, the fronto-mastoid or even the fronto-occipital application of the forceps interferes less with the molding of the head and violates the natural mechanism of labor less than the biparietal, but that in general the forceps applied in a flat pelvis antagonize more or less with the natural mechanism of labor, and that the forceps here means, art versus nature.

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The fourth question will now receive consideration. The fact of remarkable natural deliveries through very narrow pelves, proves the superiority of version over forceps, for it shows that the head, under these exceptional circumstances, untrammelled by the steel blades of the forceps, will so mould itself to the configuration of the brim as to pass through pelves through which the forceps never would drag it. By version there is added to this free moulding a tractive power fully equal to that of the forceps, but the forceps interferes with the process of moulding. After version the tractive power is applied outside of the opening through which the head is to pass, and to which it is to be moulded. By accomplishing the extraction in the manner recommended by Prof. Goodell, the operation of version is superior to the operation with the forceps.

All the other arguments against version, concerning more the child than the mother, as suppression of the placental circulation, lesions caused by extreme traction force on the neck, etc., will not be considered here, as version is generally performed more for the sake of the mother than of the child. I will only say here that the argument of Prof. Goodell for version, that the jutting promontory protects the cord after version, is a very weak one.

CONCLUSIONS.

The practical conclusions to be derived from the foregoing, are the following:

Let it be supposed we start with a case of labor with deformed pelvis, but a case in which delivery was to be effected either by nature's force or by the aid of science and art without mutilation of the child's body, with a case where the conjugate is not below 3.25 inches. In such a case, expectancy, at the beginning, should invariably be practiced, the forces of nature should be allowed to mould the head and change its shape and the case might be brought to a most favorable termination by the efforts of nature, or the forceps might be applied, if the labor pains get exhausted.

But, coming to the case, when the cervix is sufficiently dilated, the bag of waters ruptured, and the head partially engaged in the superior strait, the question arises, shall the woman be delivered by the forceps or by version? My convictions are now: if the uterus does not clasp the child's body so firmly as to render turning in its cavity exceedingly difficult, and if the waters have not long been evacuated, so that the result of turning probably would be a dangerous one from forcing the hands up to the fundus, with the head above the superior strait, version, as a rule, is the operation to be selected.

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Let it be supposed, however, that in attempting to introduce the hand into the cavity of the uterus, it was found to be exceedingly difficult; suppose, after carrying it in, the operator recognizes that it is difficult to turn the child, the parts having become dry, it is evident that the operation would prove to be one requiring a great deal of effort in order to complete it; then we should decide to discontinue efforts at version, and to try the forceps. If the head has fairly entered the cavity of the pelvis, so as to be fixed, is no longer a floating body above the superior strait, if what was difficult before has become unusually difficult, then the forceps are the means which should be selected for completing the labor.

If now, after a faithful trial with the forceps, the head does not descend, we have to resort to craniotomy, then we may try to turn the child and complete the delivery manually (if we are not in possession of a cephalotribe), or extract the child by the cranioclast or cephalotribe without delay; above all, not be induced to further attempts with the forceps.

But let us suppose we are called to a case where we have no knowledge of a deformity of the pelvis, where the head does not engage after the waters have been evacuated, or only partially descends in the cavity of the pelvis, where we have applied the forceps, and, after a trial with the forceps, we cannot make the head pass through the pelvis, if we now should exert all our physical power for the delivery of the head, we will find when the delivery is completed in that manner, that the result is usually an evil one. But before applying such a powerful traction, the prudent practitioner will in such a case suspect some impediment, and make a careful examination. If he now finds this impediment to be a flat pelvis, he has to decide to resort to version as a last remedy before performing the craniotomy, but never decide to adopt the first method (forceps) to the exclusion of the other (version).

It has been shown by Spiegelberg that for the extraction of the first-coming head the cranioclast is to be preferred, and for the after-coming head, the cephalotribe, because when the head presents, is high up and movable, the cephalotribe is both difficult to apply and dangerous; when the body is already delivered, it is as well adapted as it is ill adapted in the other case. In using the cephalotribe, no perforation is necessary on the after-coming head, because the head lengthens under the pressure upwards towards the uterine cavity, and because the basis cranii is directly acted on and crushed. In all cases of pluriparæ, we will also be guided in our actions by the course or the history of former labors.

In cases of inclined presentations of the vertex of face and trunk presentations, podalic version must be performed.

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In pelves whose conjugate ranges from 2.75 to 3 inches, turning should be the initial step.

The theories of Prof. Goodell and Schröder are comparatively new to me, but they are no doubt correct; they will influence my actions in proper cases more than all the teachings of Prof. Hodge, on the forceps, because I am opposed to the use of the forceps as a compressing instrument.

But in all cases cited by Goodell, the children did not weigh more than six to eight pounds. Now we would like to see the Professor perform a version of a child of eight to fourteen pounds, as we generally see them in the country, especially with the German population, and would like to see whether he would have the same happy results as in his cases. The theories of Goodell, are the theories of the present leading German accoucheurs who agree with him, that version is not only to be preferred to the forceps in cases of flat pelves, but that the forceps are contra-indicated until the head has almost descended in the cavity of the pelvis; but it needed all the emphatic efforts of Goodell, Schröder and others to reform the theories of Hodge and of the older schools. Until lately the question has been from time to time revealed, whether the forceps or version should be preferred. This question is, as we have seen in our conclusions, an incorrect one, because version and forceps in general exclude each other; the forceps being contra-indicated as long as the version is possible and when the forceps are indicated, the time for version has already passed.

Hodge and Goodell, of the United States, have each one in his place tried to prove their theories in a scientific way, but the teachings of Schröder and Goodell are now generally adopted by the leading obstetricians, and I propose to cheer them for their efforts to bring to naught the promise that "in sorrow thou shalt bring forth children," with the following words:

Vivat obstetricia
Et qui illam docet
Vivant omnes gravidæ
Hominum deliciæ
Vivant Schrœder and Goodell.

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ART. X.—MEDULLARY CANCER OF LEFT KIDNEY.

BY DR. GEO. M. STEELE, OF OSHKOSH, MEMBER OF THE COMMITTEE ON PATHOLOGY.

Mrs. K——, æt. 47 years, 5 months, English, farmer's wife, mother of five children, and had two miscarriages before bearing a living child; age of youngest child, 10 years.

Mrs. K—— dated the beginning of her trouble at a labor which occurred about eleven years ago, when she first felt a burning sensation across the region of the kidneys. Her accouchements were all natural except the last, which was followed by some supposed uterine derangement, which continued until her death, though the post-mortem examination revealed a *perfectly* healthy uterus. Within three years following her last confinement, or seven years ago, she first discovered a small enlargement at the inner side of her left hip, which slowly but steadily developed, and which, for between five and six years, she supposed to be due to the uterine derangement. Her physician told her after her confinement, that she had a misplacement of her womb, though it seems *probable* that he was mistaken, and that the tumor of the kidney was then obscurely manifesting itself.

Since first noticed it gradually became more and more troublesome, giving her more or less pain and soreness whenever she did heavy or an unusual amount of labor, or walked much. This seemed to be her weak spot, as she termed it. For the last three years she was unable to walk to her church, a half mile away, without serious suffering resulting, and for some time previous to this experienced difficulty in walking. During this time she was also often obliged to arise at night and walk the floor from pain. Pressure over the left kidney from before or behind could not be tolerated. The progress of the disease was slow until fifteen months before her death, when she was obliged to give up her work, and thenceforward failed quite rapidly. Before this time she had regularly performed her household duties, though under increasing difficulties. Her pain was soon so severe that it became necessary to keep her constantly under the influence of opium. The tenderness was extreme, slight pressure over the tumor causing her pain for hours. Her bowels were often loose until she commenced the use of opium. Her urine was

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not unlike that in any severe illness. There was never hæmaturia, no albumen; the water was sometimes scanty, at other times profuse, and often contained deposits of urates and the phosphates.

During the last year of life vomiting was troublesome, and but little nourishment could be taken on account of flatulence and pain occasioned thereby.

A dropsical condition in the lower extremities first manifested itself six months before death; it passed away for a short time, when it returned and gradually extended to the body, toward the last becoming general. The ascites was extreme and very distressing, but before this became very intense there was a large dropsical infiltration in the back, all about the region of the kidneys.

There was an enlargement of glands at the base of the neck on the left side, for a year and a half before death, but this gave no trouble. For some time preceding death the abdominal veins were quite enlarged. The pulse was not materially changed in frequency. The temperature was not taken.

In this condition she rapidly sank until death relieved her of her intense suffering. A post-mortem examination was held twenty hours after death. Now, for the first time since I saw the patient, eleven months before, was it possible to carefully examine the tumor. There could be distinctly felt a large movable mass occupying mostly the left side of abdomen, and extending from near the pubis to the diaphragm, with much greater length than breadth. The contents of the abdomen were now exposed, and the true nature of the disease first disclosed. The left kidney was immensely enlarged, nodular, and firmly adherent to the spinal column, evidently in a condition of cancerous degeneration. The intestines were crowded to the right side of the abdomen, the descending colon passing down in front and attached to the cancerous mass. There were also adhesions between this tumor and the small intestines, mesentery, stomach, liver, spleen, pancreas and diaphragm. The glands in the neighborhood of the pelvis of kidney were much enlarged, and firmly adherent to the vertebræ, enclosing the abdominal aorta and ascending vena cava so firmly as to necessitate the removal of these vessels with the diseased mass. The right kidney, stomach, liver, spleen and pancreas were not invaded by the cancer. The pelvic organs were all in a perfect state of health. The thorax was not examined, owing to surrounding circumstances, but there was little or no reason for suspecting the disease to have invaded the lungs by metastasis, as a careful examination of the renal veins could detect no diseased masses within them.

When removed, the entire mass measured 10 inches in length, 8 in breadth, and was 5 inches thick in thickest place. The kidney proper

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measured 8¼ inches in length, by 3¾ to 4¾ inches in breadth. A portion only of the lower extremity of the organ contained any comparatively healthy kidney structure. Five pyramids were here still left intact. From below upwards the apparently healthy structure became thinner and thinner until it was entirely lost in broken down matter.

The middle portion of the organ was broken down into cavities of blood tinged, grayish-looking matter, and ragged masses of still resisting connective tissue, inclosing cheesy masses, and occasionally blood clots, marking the site of former hemorrhages.

In the upper portion degeneration had not advanced quite so far. Here bundles of schirrhotic tissue, containing nests of cancer cells developed from epithelium of tubules, could be seen radiating in various directions. The large section presented represents a Malpighian pyramid in this condition, with its form still quite well preserved. Upon cutting, it gives a grating sensation.

The ureters were not preserved, and consequently not examined. The aorta and renal arteries were somewhat contracted, and the aorta atheromatous. The veins were comparatively healthy, except some contraction where they enter the neighboring infiltrated glandular masses. The lymphatic glands of the mesentery, and those surrounding the kidney were enlarged and generally contained broken down, creamy tissues. The supra-renal capsule and uppermost portion of the kidney were converted into a mass of blood and cancerous debris.

I am indebted to Dr. A. Trautman, of the Northern Hospital, for exceedingly valuable aid in the careful examination of this specimen, and for miscroscopical mountings of various portions of the same, which are here presented for your examination.

That this was a *primary renal cancer* cannot be doubted, and that it originated and developed within the glandular structure of the kidney, one cannot fail to be convinced after a careful examination of the pathological specimen. But whether in cortical substances or in papillæ cannot be demonstrated.

Pathologists differ widely with regard to many points connected with this disease. Wilks belongs to a class who think it remarkably seldom that the proper tissue of the kidney is primarily affected; believing that the disease originates in the lymphatic glands, or other parts outside of the kidney, especially near its hilus, while the organ itself is comparatively untouched, the disease donning the form of the organ for it has probably penetrated the hilus and expanded the capsule. Others, and among them Jones, Sieveking, Rindfleisch, *et al.*, believe it to generally develop *within* the substance of the organ by a process of substitution, instead of dispossession.

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The opinions of pathologists are also at variance with regard to what structures are first attacked; some hold that it originates in the cellular tissue, especially that surrounding the Malpighian corpuscles, others that the disease developes from the endothelium of the blood vessels, which is supposed to be true in many instances of paranephritic cancer, and still others that it originates in the epithelium of the urinary tubules. The last view is the more recent and generally accepted one. That there should be a diversity of opinion upon the pathology of this disease is not strange, when we take into account the fact that when examination is rendered possible, the disease has already invaded and transformed beyond recognition the parts first attacked.

Cancer is the rarest of all forms of renal disease, but is not the less interesting from the fact that it is liable to present itself in the great family of abdominal tumors. Mistakes in the diagnosis of this disease have been frequent among physicians of the highest order and largest experience.

The cause of primary cancer of the kidney is very obscure. It has, undoubtedly, sometimes been traced to an injury, though the reason for a cancer rather than a benign growth resulting still remains to be given. An hereditory predisposition to primary cancer of the kidney has rarely ever been discovered. In this case there had been no cancer known anywhere in the family.

All ages are liable to this affection though the young and the old are most liable to it. About one-third of all cases of the primary disease occur in children under five years of age. Adult males are more prone to this affection than females. Secondary cancer may appear here as elsewhere in the body. Generally one kidney only is attacked, and as often one as the other.

Encephaloid or medullary cancer is here met with in all but exceptional cases. Colloid, epithelial and those of a mixed nature, consisting of carcinoma, sarcoma and adenoma have been described. Fogge has described a case of carcinoma lipomatosum of the right kidney. This growth presented the characteristic alveolar structure of carcinoma.

The case before us is undoubtedly of the medullary variety with some schirrhotic masses within it. The weight of these growths varies from 1 lb. 9 oz. to 31 lbs., and their interior appearance varies according to the stage of degeneration and softening.

Calculi are often found in the pelvis of the kidney, but there were none in this case. The ureters and blood-vessels are often occupied with the cancer. When the growths appear in the veins portions are sometimes broken off and carried to the lungs, when the disease commences there. When the vena cava is much encroached upon anasarca of lower extrem-

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ities results. Ascites is not common although it was extreme in the present case.

In primary renal cancer secondary formations of adjacent structures are very common; the absorbent glands about the hilus of the kidney, and along the vertebræ and mesenteric glands are most often affected, and next in order come the lungs and liver; less frequently other organs, as spleen, pancreas and stomach. Secondary affection of the pelvic organs from primary renal cancer is said to be extremely rare; a point of considerable interest in the differential diagnosis from tumors of the pelvic organs.

The most prominent symptoms of renal cancer are hæmaturia, tumor and pain, though hæmaturia and pain may either or both be absent. In this case pain was the predominant symptom from first to last, and hæmaturia never occurred. The tumor, as before stated, has been noticeable for at least seven years, and was always exquisitely sensitive. Very rarely the primary disease runs its entire course without giving rise to any signs or symptoms whatever, though this is not uncommon in secondary cancer. Pain is said to be an uncertain symptom, though of value in connection with other manifestations. It may be constant or intermittent, but is quite apt to be paroxysmally worse. It radiates in various directions, and when along the sciatic nerve, if other indications of the disease are not prominent, may give the impression that the trouble is neuralgic in character. True renal colic may occur in this disease either from the passage of calculi or of blood clots. Much trouble is sometimes experienced from collection of blood clots in the bladder. Hæmaturia may occur only early in the disease or at intervals throughout its course, and is a symptom of great value. It occurs in a majority of the cases, though it may never take place, the blood being prevented from reaching the bladder by closure of the ureter from blood clot or cancerous matter. Its chief characters, when present, are its spontaneous appearance at irregular intervals without assignable cause, without pain and in considerable quantities. It is rarely ever so scanty as not easily to be detected, and seldom sufficient to lead to general anæmia and faintness.

These tumors are generally immovable, owing to surrounding adhesions, though a floating kidney may become the seat of cancer. Their sensitiveness upon manipulation varies greatly. Generally the impression of more or less elasticity is given. Percussion over the tumor yields a dull note except where the colon passes down over it, or small intestines may be attached. Very rarely the colon has been found pushed aside. When passing in front different conditions must be expected, arising from gas, fæces, or a relaxed and empty state. Distension of the colon by air, per rectum, has been suggested as a means of diagnosis.

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There have been rare cases of distinctly pulsating renal cancer; bruit has also accompanied the pulsation and given the impression of aneurism.

The urine, apart from the blood when hæmaturia occurs, presents no special changes in cases of renal cancer, though some have claimed to have discovered cancer elements in the urine, but the balance of evidence seems to be against the detection of miscroscopic elements characteristic of cancer. The supposed cancer cells are believed to be merely epithelium particles derived from the renal pelvis and ureters.

Various symptoms may result from the interference of the tumor upon surrounding organs. The whole system is generally seriously affected; emaciation, exhaustion, anæmia and constitutional irritation and restlessness coming on more or less rapidly. The pulse and temperature do not usually vary much from the nominal condition, except as influenced by exhaustion and inflammatory complications, which may occur.

The duration of cases of renal cancer averages in children nearly seven months, with the extremes of from five weeks to two years; in adults two and a half years, with extremes of from five months to eighteen years. In the present case it had been noticed for at least seven years, and there is good reason for believing it to have commenced its growth three or four years previous to this.

Uræmic symptoms are said to have never been observed in cases of this disease. Death usually occurs from gradual exhaustion, as in this case, but may be hastened by rupture of the diseased organ.

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Art. XI.—PRESENTATION OF THE FUNIS, WITH NOTES OF TEN CASES.

By J. G. Meachem, Jr., M. D., of Racine.

Funis presentation is that position of the umbilical cord found in advance of, or at the side of the presenting part of the child, at the beginning of labor. It is the term best designating any advanced position of the cord, whether slight in extent, or when complete enough to occupy the vagina or even to protrude from the vulva. In the latter meanings it is used synonymously with the word prolapse, the two expressions relating to degree of protrusion, rather than to the protrusion itself.

As a presentation, however, it bears an important relation to human life, and when left to itself is a frequent cause of destruction to the life of the child that is to be born. Indeed, I may say that in the majority of births accompanied by this accidental complication, the life of the child is sacrificed. It matters not whether the cord presents much or little, whether it can be felt by digital examination or whether it fills the vagina; just so surely as it presents sufficiently to be caught between the unyielding pelvic walls of the mother and the presenting part of the child, and pressure is exerted upon it by the force of uterine contraction, thus interfering with the blood supply through it to the child, death must result. Cessation of blood supply to the fœtus by pressure on the cord, then, being the cause of death, it would seem that if it occur in any natural labor, that is, a labor left to itself, not made artificial, which labor gives birth to a living child, that living birth was due to some cause that prevented sufficient pressure to cut off the blood supply. This result occasionally occurs, and, in looking for an explanation of its occurrence, we are directed to two conditions that make it clear how nature often remedies its own mistakes. The first of these is, "size of child," relatively small as compared with the capacity of the pelvis through which it is to pass. If the child, by its small size, needs but little moulding to shape in its rotation through the pelvis, there is correspondingly little pressure exerted on the cord as it lies between the child and the pelvic walls, consequently giving greater security against fatal result. The second condition of safety is, "rapidity of labor." It is well known that a child in utero deprived of blood supply for a period of time longer than two or three minutes, ceases to live; and upon this fact depends the benefit of a labor sufficiently rapid to expel the child without a contin-

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uous pressure longer than for that time. It is sometimes done by a very few powerful uterine contractions that terminate labor at once; or, as it happens in other cases, the interval between the contractions is so complete, the relaxation so perfect, as to allow a receding of the head (or other part) and a restoration of circulation through the cord, thus alternating between cessation and restoration of blood-flow, and allowing no time sufficiently long to deprive the fœtus of its support. The first is an anatomical reason, and the second a physiological one: and to them, I may say, are due all natural favorable results in funis presentation. I suppose it is possible in cross presentations, and perhaps some others for a spontaneous evolution of the child to change the presenting part, and so withdraw a loop of the funis; but these operations of nature are so rare that they furnish no data for our benefit. When the above named conditions do not apply, and in their stead opposite ones are found, the fatal result is certain. Indeed, the average labor gives no better results than a protracted and difficult one.

The exact mortality in unaided cases is difficult to obtain. From a table of 355 cases collected by Dr. Churchill, and deducting the number supposed to have been saved by artificial aid, I find that 251 were fatal, which is more than two-thirds of the whole number—truly a fearful mortality.

Fortunately, however, presentation of the funis is not of very frequent occurence. In 98,512 collected cases of labor it occured 401 times, or once in 245½ cases,* and this seems to be accepted as a pretty reliable average. But in individual practice the result is far different. Mr. Bland, in 1,897 cases met with it but once, while Dr. Churchill in 1,525 cases, met with it seven times. In a smaller number, 691 cases, by Mr. Gregory, it occured seven times, while in 640 cases by Mr. Granville it happened but once. Dr. Thomas Savage, of Birmingham, in 1,400 cases met with it four times.† Dr. Kemper, of Muncie, Ind., in 400 published cases, met with it twice.‡ Dr. E. P. Christian, of Wyandotte, Mich., in 1,516 cases met with it twenty-three times.‖ In my own practice of 931 cases I have met with it ten times, or once in about 93 cases. It appears that this complication happens nearly three times as often in German practice as it does in French, and about twice as often in English as in French.§ Of American practice I have no extended statistics.

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* For these and some others of the following statistics see Churchill's System of Midwifery.

† New York Med. Journal, 1873, p. 308 [Lancet, February. 22, 1873.]

‡ Am. Practitioner, 1878, p. 228.

‖ Detroit Rev. of Med., March, 1870; and by private correspondence.

§ Churchill's Midwifery, p. 415.

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I shall not enter into a consideration of the supposed causes of this accident, as they are pretty fully detailed in all good text books. Curiously enough, so far as we are concerned causes and effect have nothing in common. Except with the single one, when the cord is brought down by a sudden rush of the waters on rupture of the membranes, we have nothing to do with the cause. In a general sense, we have to deal with a condition as it exists—as presented to us at the time of labor; consequently, our efforts must be directed towards preventing a result that will follow this condition, rather than to the cause of the condition. And if we could prevent it, we do not often have opportunity, as in most cases our services are not required until the presentation is pretty well established. I will therefore endeavor to bring together facts in the treatment that may be of benefit to us. What shall we do with it, is the question that interests us most.

When it is found that pulsations in the cord have ceased, and the signs of death of the child are positive, it is simply common sense to leave the case to nature.

Case I.—Mrs. B——, Norwegian, age about 30, called me to attend at her second confinement. The pains were regular about once in three minutes. On examination I found os uteri a little more than half dilated; membranes already ruptured; vertex presentation; good pressure with every pain. A long loop of the funis hung through the os well into the vagina, in which the pulsations could be felt but feebly. An attempt to replace the cord with the fingers failed, but excited more rapid uterine contractions. Pulsation ceased altogether, and the case was left to nature. Result, after one hour, a still-born male child.

Case II.—Mrs. D——, Irish, age 26, called me for her fourth labor. The pains had been severe for several hours, but at the time of my arrival had almost ceased. Examination showed os uteri well dilated and membranes ruptured. The child presented in the third position of vertex. A loop of the cord, at least ten inches in length, protruded at the vulva. There was no pulsation, nor could I get any by pushing the head up to relieve the pressure. Child considered dead; and, after waiting a reasonable time for the renewal of pains, I administered a dose of ergot, which soon completed the labor. Result as expected, a still-born male child.

In treating disease and irregular actions of different parts of the body, we can find, often, successful means of relief by aiding the efforts nature makes to remedy her own mistakes. And I suppose that for the relief of the complication of labor under consideration, those persons who strongly advocate and resort to the use of the forceps, and to the

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operation of turning the child,* do so under the idea that by art they are making conditions precisely like those previously mentioned, namely, "size of (head) child," and "rapidity of labor," that nature, perhaps, accidentally provides in her successful cases. The skillful, careful use of the forceps may reduce to a certain degree the diameter of the head, answering to the former condition, at the same time hastening delivery; while, in the operation of turning, the effect is of the latter condition, the rapidity of labor. But it so happens, that to use these means, other dangers are added to the ones we are trying to avoid. While before, the danger belonged wholly to the child, it now extends to the mother as well, and it becomes necessary to consider well whether saving of life in the case of the child, is not equaled by loss of life on the part of the mother.

From a large number of collected cases, Dr. Churchill gives the fatality of children as one in every two and one-half cases of footling presentation, which is practically what is brought about by the operation of turning. Of course there is the advantage that has been gained by the early presentation of the head dilating the os more thoroughly than the descent of the feet could, yet even with this gain the mortality is given as but little less than one in three. Now, as the loss is about one in every two in funis presentations, it would seem that by taking advantage of turning, a certain gain was ensured. But on the other hand in labors left to themselves the loss to the mother is not greater than one in two hundred and fifty, or three hundred, while, after turning, the fatality is raised to about one in every fifteen or twenty. And so with the forceps, the use of which does not lessen fœtal mortality, and doubles maternal mortality.†

A gain, therefore, on one hand may be a loss on the other, and it follows that the use of these means of speedy delivery must be weighed carefully in each and every individual case. Pertinent to this idea, I make the following quotation: "There is, perhaps, no one point in regard to presentation of the funis which calls for more careful consideration and judicious balancing of the special circumstances of individual cases. A capacious pelvis, a yielding and moderately dilated os, and other conditions favorable to the operation itself, afford strong presumption that turning may be effected without any great risk to the mother. The period may not have arrived at which the idea of forceps can be entertained, and yet the child is in a state of immediate peril, so that the question may simply be: Are we to act, or are we to leave the child to its fate? Here experience and the habitual caution which matured experience engenders, can be the only safe guides. * * *

* I am referring now to cases that are delivered solely on account of the funis presentation.

† See article No. 7: p. 143, Trans. Wis. State Med. Soc., 1879, by J. K. Bartlett, MD.

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We must not forget while forming our resolution, that the operation does not necessarily, even under the most favorable circumstances, relieve the child from danger. For, the operation being performed, there is still the critical period of the passage of the head, during which, although everything be done which skill can achieve, the child, already enfeebled, may succumb from the renewed pressure on the cord."* And again, referring to the use of the forceps, I quote: "But these, or other operations, are only to be attempted when the conditions are generally favorable, and the risk to the mother is not great."†

In cases where there is every reason to expect a speedy termination of the labor, there being a roomy pelvis, frequent pains, with strong propulsive effort, when the interval of rest is tolerably complete and perfect, it may occasionally happen that a slight advantage can be gained by pushing gently with one or two fingers the head as it recedes towards the brim, thereby more surely interrupting the otherwise continuous pressure on the cord during every interval of rest.

CASE III.—Mrs. R——, Danish, age 30, in labor with her fourth child. Pains regular once in two minutes, with good propulsive force. She had always had quick labors. Examination showed the os soft and yielding, nearly dilated, with waters presenting. I ruptured the membranes, and head presented in first position. At the left sacro-iliac synchondrosis, the point at which there is the least chance of pressure, a loop of the funis could be felt by the finger, that probably came within reach with the escape of the waters. Thinking that the case would terminate soon, I attempted no interference with nature's work, except to make gentle but steady pressure against the head, crowding it upwards during every interval of relaxation between the pains. About a dozen pains completed the labor. Child asphyxiated, but by prompt efforts at resuscitation it was finally saved.

In footling and breech presentations, there is but little to do so far as a presenting funis is concerned. The vital point is to guard carefully the bag of waters, preventing its rupture until the os (and the vagina, if possible) is widely dilated, then to deliver as rapidly as possible, to obviate delay in the passage of the head.

CASE IV.—Mrs. B——, German, age 38, called me to attend at her ninth labor. Membranes had ruptured two hours before I was sent for. There had been occasional but not severe pains for four or five hours Examination showed the os open about three inches, but soft and dilatable; pelvis large; breech presented in first position, apparently

*Leischman's System of Midwifery, p. 367.

†Ibid., p. 366.

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astride a loop of the funis. I introduced my hand and fingers over the groin upon the flexure of the thighs, and, making traction, soon completed delivery. Child alive.

CASE V.—Mrs. B——, German, age 41, called me to her tenth labor. Had had irregular pains for several hours.* Examination revealed the os nearly dilated, with bag of waters presenting. On account of the large quantity of water, I could not determine the presentation of the child. The next pain ruptured the membranes, and during the flow a considerable length of the funis came down, together with the right foot. The presentation now being plain, I grasped the foot and delivered as in ordinary footling cases. There was a little delay, however, in the passage of the head, which caused the child to be partially asphyxiated, but it was soon resuscitated.

I have already spoken of the idea of aiding nature in her efforts to remedy her own mistakes; but now we will examine into a means that nature does not resort to, except, perhaps, in very rare occasions of spontaneous evolution, and that is, reposition of the cord above the superior strait. The simple replacing the cord above the superior strait is generally considered to be very easily done, but the permanency of the replacement is attended with much greater difficulty. To replace the cord, we are usually advised to introduce "the index and middle fingers in the interval between pains, and gradually push the coil upwards beyond the presenting part into the cavity of the uterus." As a direction, this seems easy enough, but if we think, for a moment, that our fingers are not so available for work in manipulating a slippery cord as they are for making digital examinations, we shall understand one cause of failure in this proceeding. The index finger barely reaches the promontory of the sacrum at the best, and from the lateral widening of the pelvis it will not more than follow the circle of the brim until it nears the pubes. At this point, if the funis presented, possibly it could be reposited with the fingers, but further back, where the cord usually comes down, it becomes almost impossible, and this, too, with all that can be gained by crowding the perineum upwards and backwards. If anything is accomplished in this direction, the hand must be carried into the vagina far enough to place the cord wholly above the presenting part of the child. That this may be done, I have no doubt, but that it is done easily and frequently, I do not believe. And if we look into the results of this manœuvre, we shall see that, in the majority of cases, it is a failure. Dr. Churchill says: "On the whole, I may say, that it rarely succeeds." Dr. Meigs says: "I have succeeded with my hand alone, but have much more

*Not an uncommon occurrence in footling cases.

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often failed." Dr. Leischman says: "Unfortunately, in a large proportion of cases this manœuvre will fail." This testimony of failure rests upon the improbability of securing permanent replacement, due, in the first place, to frequent difficulty in pushing the cord high enough up into the womb, and, in the second place, to the slippery nature of the funis, which allows it to fall down again as the hand is withdrawn, or to be pushed down by the succeeding contractions of the uterus.

It is these difficulties that have occasioned the use of the numerous contrivances that have been proposed from time to time. Pieces of sponge, or other soft material, pushed up after the cord; leather and cloth bags to enclose it and then pushed up; elastic catheters, thin flat whalebones, and other soft and yielding instruments that will do no injury by being left in the parturient canal, that by being attached to the cord can hold it "above that circular portion of the uterus which is contracted over the presenting part" until the child is expelled. Although no general dependence can be placed upon the use of any repositor, it is, however, certain from records that almost every kind has been of service in individual cases. Dr. Bedford (as quoted by Dr. Steadman*) says: "I have very little confidence in any of these contrivances. They may sometimes succeed in dexterous hands, but very frequently they fail. * * * It is amusing to hear of the facility with which the reposition of the funis can be effected. But, gentlemen, it is one thing to talk and quite another to act." Dr. Croft suggested that the cord be carried to the fundus and hooked on the highest part of the child, and Dr. Earle (Queen's Hospital, Birmingham) has reported three cases successfully treated in this way.†

Dr. L. J. Woollen, of Morefield, Indiana, failing to replace the cord, hooked it upon the points of the index and middle fingers and carried it towards the symphysis pubis, describing the fourth part of a circle, letting it remain in that position. The funis did not come down again, and the child was born alive.‡

The condition of constant contraction of the uterus, so as to give no interval of rest between the pains, with the head pushed down, and not receding, and the liquor amnii fully discharged, offers no practicable opportunity for the return of the cord by any means that have yet been proposed, anæsthetics not excepted.

Case VI.—Mrs. S——, German, age 30, called me to attend at her first labor. She had had irregular neuralgic pains during the whole day. The os was just beginning to dilate. I prescribed one-third grain mor-

* Detroit Rev. of Med., Vol. 2, p. 406.

† Braithwaite's Retrospect. Part 49, p. 197.

‡ Half Yearly Compendium, Jan. 1870, p. 337.

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phine to be taken if the same kind of pains continued, and left her for six hours. On my return found the os about three and one-half inches open. Membranes ruptured about half an hour before, since which time the uterus had wrapped itself closely about the fœtus in a continous contraction. A coil of the funis was in advance of the head, giving feeble pulsations. I made several attempts at reposition, but failed in all, as the strong contraction of the uterus opposed manipulation for the return of a slippery cord. The morphine was then given, which, in about half an hour, relieved the tonic contraction, bringing in its stead somewhat regular pains. The cord was now pulseless and flaccid (and the child dead), and no further attempt was made to replace it. The labor terminated in about two hours with still-born male child.

The simplest method for replacing the cord within the cavity of the uterus, and the one that promises most in any given number of cases, is what is known as the "postural method," originally suggested by H. Van Deventer, in 1701, and revived in this country by Dr. T. G. Thomas, in 1858, at a meeting of the New York Academy of Medicine.* It consists principally of inverting the uterine axis by placing the woman upon her elbows and knees, thereby allowing the slippery funis to gravitate back into the uterine cavity. In a certain proportion of cases this result will occur by the power of gravity alone. The first case mentioned by Dr. Thomas, was of this kind.† Dr. E. R. Maxson, says of one, "In fact, it readily slipped back with the aid of very slight manipulation."‡ But in general, manual aid is necessary to perfect the replacement. The hand should push up the cord, and retain it above the presenting part of the child, until the succeeding pains cause it to engage within, or to occupy the pelvic cavity, when the woman can resume the position of her choice.

"The case with which the hand is passed into the vagina and uterus, with the patient in this position is wonderful, and will surprise anyone that has never made the effort."—Maxson.

Dr. Thomas' second case required to be pushed up, but it did not come down again. Dr. E. W. Jenks has reported a similar successful proceeding, when the funis and hands were pushed up, and a shoulder presentation changed into a vertex, perfectly retaining the cord.‖ Dr. Chas. E. Steadman reports the same favorable result; that, after returning the whole cord, the hand was kept on the aperture when it had disappeared till two slight pains had come on to advance the head. There

* N. Y. Journal of Medicine, 3d. series, 1858, p. 242.
† Ibid., p. 243.
‡ The Med. and Surg. Reporter, Phila., 1858, p. 242.
‖ Detroit Rev. of Med., May, 1866.

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was no return of the cord, and the patient was allowed to get up and walk about.* Dr. Fifield (as stated by Dr. Steadman) proceeded similarly and successfully. Dr. Christian was successful in four cases, and failed in one.† In my own practice I have resorted to this method four times, with perfect replacement in every instance.

CASE VII.—Mrs. G——, German, age 40, tenth labor. Had been sick several hours, with midwife in attendance, when I was called. Examination showed the os widely dilated, with vertex presenting in second position, together with a loop of funis that protruded at the vulva; pains had almost ceased, with but little pressure; pulsation in cord very distinct. I placed the patient on her knees, with hips elevated, and hands and chest resting on a pillow, and introduced my hand, carrying the cord within the uterus. The next pain advanced the head, leaving the funis above it. It did not come down again. A dose of ergot soon increased the pains and terminated the labor. The child was well developed, and of good color; it, however, gasped once or twice, and then died in spite of all efforts to resuscitate it, greatly to my disappointment.

CASE VIII.—Mrs. C——, Norwegian, age 31, fifth labor. Had suffered much with neuralgia, several days before labor begun, also, during first stage of labor, which was somewhat protracted. Examination showed membranes intact, with good pressure against a nearly dilated os, by regular pains that allowed intervals of complete rest between them. I ruptured the membranes, allowing the fluids to run off slowly. After the next pain, I discovered a small loop of funis at left sacro-iliac junction, the child presenting in the first position of the vertex. I placed the woman in the knee-elbow position, with the hips elevated, and introduced my hand as in the previous case, and with the fingers pushed the cord above the head of the child. This was done in an interval of rest, and held there until the head was advanced before the cord, when the hand was withdrawn and the patient turned to the usual position on the back. The case terminated well, with a strong and vigorous child alive.

CASE IX.—Mrs. B——, German, age 39, fifth labor Had been sick two hours; pains regular, with decided intervals of rest. Examination showed os uteri two-thirds dilated, with membranes unruptured; could feel head under arch of pubis, and also could feel something soft and yielding in advance of it, but was uncertain whether it was placental or coils of the funis. The pains increasing in force and frequency, I ventured to rupture the membranes, looking for a speedy termination of the

* Ibid. Sept., 1867.

† Published cases and private letter.

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labor. The funis now filled the vagina. Without delay I placed the woman in the knee-elbow position, and introduced my hand as before. A pain now came on, which caused delay, and some pressure on the cord. My hand being in the vagina, as soon as relaxation of the womb occurred, I lifted the head out of the pelvis and carried the cord above it. The next uterine effort placed the head in its original position, when the patient was allowed to turn upon her back. The labor terminated naturally in forty minutes, with a healthy, vigorous child.

CASE X.—Mrs. K——, Irish, age 28, called me for her third labor. Found her with frequent and severe pains; os open, and waters drained off; vertex presented in first position, and a loop of funis lay along the left sacro-iliac junction into the vagina. Placed patient in knee-elbow position, and proceeded as in previous cases. After being replaced, the cord did not come down again. The introduction of my hand excited almost continuous uterine contractions, ending the labor in about twenty minutes. The child was somewhat asphyxiated, but restored alive.

This method of treatment seems to be applicable to most cases of cranial or shoulder presentations with the cord,* and also to cases where cephalic version can be performed. There are, however, some few exceptions. The late Dr. Geo. T. Elliott, Jr., mentioned two cases where this method was tried with the greatest care, and both failed.† The cord was driven up-hill by the force of the uterine contractions, because it was "not sheltered by a presenting part of sufficient volume" to retain it. And this is the secret of success in all cases; the replaced cord finds lodgment behind the head, ear, chin, arm or hand as the presenting part engages in the pelvis. Notwithstanding the failure in the two cases, Dr. Elliott said: "I am convinced that by its aid we can better and more readily retain the funis in utero than by any other means with which I am familiar. * * * I shall certainly employ it hereafter whenever the condition of facts is such as to prevent me from delivering with great rapidity, either manually or with forceps."‡ This is the general expression of those who have had occasion to resort to the "postural method," as being more consistent with good judgment and common sense than any other yet proposed. In the sixteen cases I have incidentally referred to, all but three were successful—a great "gain on the old practice of fishing for the cord, and trying to poke it back with whalebones, and tapes, and bags, and wreathing it in graceful festoons about the limbs of the fœtus."‖

Regarding my own cases, I present the following table:

* Dr. Maxson in Med. and Surg. Reporter, June, 1867, p. 514.

† New York Journal of Med., Vol. 5, 3d Series, pp. 174 and 175.

‡ Ibid, p. 177.

‖ Dr. Steadman in Detroit Rev. of Med., 1867, from Boston Med. and Surg. Journal.

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No. of Case.	Nationality of Mother.	Age.	No. of Pregnancy.	Presentation, etc.	Funis.	Mode of Delivery.	Child Alive or Dead.	Sex.	Remarks.
1	Norwegian.	30	Second.	Funis and vertex. Membranes ruptured; os half dilated.	.....	Natural.	Dead.	Male.	Reposition attempted, but violent uterine contraction prevented.
2	Irish.	26	Fourth.	Funis and vertex. Membranes ruptured; os fully dilated.	Hung without the vulva.	Natural. (Ergot.)	Dead.	Male.	Child was dead, and ergot was given to expedite the labor.
3	Danish.	30	Fourth.	Vertex, and funis at left sacro-iliac synchondrosis. Os soft, nearly dilated.	Came down on escape of waters.	Natural.	Alive.	Male.	I lifted the head during every interval of rest, to relieve the pressure on the cord.
4	German.	38	Ninth.	Funis and breech.	Child astride of cord.	Traction and rapid delivery.	Alive.	Female.	Introduced hand and finger over groin on flexture of thighs.
5	German.	41	Tenth.	Funis and right foot. Os nearly dilated.	.....	Traction and rapid delivery.	Alive.	Male.	Grasped the foot and made rapid traction.
6	German.	30	First.	Funis and vertex.	Re-position attempted but failed.	Natural. (Morphine to relieve tonic spasm.)	Dead.	Male.	Neuralgia and irregular pains, after which, steady tonic contraction.
7	German.	40	Tenth.	Funis and vertex.	Cord at vulva. Reposited by postural method.	Natural. (Ergot.)	Dead.	Female.	Propulsive force feeble; ergot to increase it.
8	Norwegian.	31	Fifth.	Vertex and funis.	Reposited by postural method.	Natural.	Alive.	Male.	Cord did not come down again.
9	German.	39	Fifth.	Funis and vertex.	Reposited by postural method.	Natural.	Alive.	Female.	Cord did not come down again.
10	Irish	28	Third.	Vertex and funis.	Reposited by postural method.	Natural.	Alive.	Male.	Os was dilated, and waters drained off. Cord did not come down again.

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In examining the literature of presentation (and prolapse) of the funis, and of reports of cases involving the cord, I have been surprised at the meagre amount of written matter upon this subject. In fact, outside of the regular works on obstetrics (which treat of it more or less thoroughly in a general way), very little is to be found. Very many of the medical periodicals of the day pass volume after volume without anything in regard to it; and, in consequence, the compendiums and abstracts have but occasional selections. The records and experience of individual practice are but seldom given; and in analysis of any given number of obstetric cases, if made at all, they are so made as to give the funis but a passing remark. In one of the most recent publications—The Therapeutics of Gynæcology and Obstetrics, by W. B. Atkinson, of Philadelphia, in that part of it devoted to obstetrics, there is not so much as a mention of the subject we have been considering, which to me seems to be a very great omission from a book that is intended to be a standard reference book.

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ART. XII.—INTERNAL HEMORRHOIDS.

BY DR. H. T. GODFREY, OF BENTON.

The treatment of hemorrhoids is a subject of great importance to the general practitioner of medicine, because it is a disease about which he is consulted almost daily, and upon his success in combating such oft-recurring and ever present maladies will depend, to a great extent, his reputation in the community in which he lives, and his opportunities for usefulness to his fellow men.

A man may have an intimate knowledge of the anatomy of the parts concerned in the operations for ovarian tumor, vesical calculus, or the ligation of the great arteries, and be perfectly capable of performing these masterpieces of chirurgical skill, but will be fortunate indeed if called upon to perform them many times in his life, whilst, even in a small country practice, he may be called on to treat piles many times in a year, for the piles, like the poor, we have always with us.

Internal hemorrhoids consist in a varicose condition of the hemorrhoidal veins, complicated with more or less thickening of the mucous membrane and connective tissue.—Billroth. There is also, in most cases, an enlargement of the capillaries making connection with the arteries of the part, and forming a veritable aneurism by anastomosis.—Skey.

The proximate causes of this disease are well understood,—the sedentary habit, constipated bowels, abdominal tumors, pregnancy and genital irritation. The connection of the last named as a cause, will be readily understood, if we consider for a moment the vascular connection between the genitals and the lower bowels. The internal pudic artery supplies the two hemorrhoidal arteries, and also the artery of the bulb, the dorsal penis and the artery of the corpus cavernosum, and a frequent congestion of one set of vessels will be very likely to increase, at times, the flow through the remaining branches of the same trunk.

In Vol. VII Ziemsenn's Cyclopædia, Leube cites catarrh of the rectum a common cause of hemorrhoids. It may sometimes be a cause, but I think it is oftener a result. The same author also names neoplasma of the rectum, and especially cancer, as a cause.

The congestion, from whatever cause, whether active, as from genital irritation, or passive, as from obstruction of the return flow, as in neoplasma, pregnancy, or obstinate constipation, is illy borne by the valve-

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less, and comparatively unsupported hemorrhoidal veins; pouch like dilations are formed. These with each act of defecation are bruised by fæces, and by the muscular contraction necessary to the act, and are carried with the fæces and a certain quantity of mucous membrane and connective tissue through the sphincter. Partial strangulation and congestion follow and are partly relieved by an exudation of blood from the parts, and finally, on completion of the act, and the patient resuming the erect posture, the tumors are again drawn within the rectum by the action of the longitudinal muscular fibres of that viscus, in a manner similar to that familar to everyone as the last part of the act of defecation in the horse.

Of the palliative (although in many instances the only possible) treatment, I shall not speak, but shall confine myself to some surgical proceedings intended to accomplish a radical cure.

1st. Excision.—This was the proceeding adopted by Abernethy, who removed them with scissors, after first cleaning the bowels by an active purge.

J. L. Petit followed the same course, but records in his Maladies Chirurgicales a case in which the patient died of hemorrhage in five hours after the operation.

Samuel Cooper (Surg. Dict.) recommends the same proceeding, unless the pile is high up, in which case he prefers the ligature.

Sir Astley Cooper and Dupuytren both operated in this way, and both had reason to regret having done so.

Our own Prof. Gross says: "To cut off an erectile tumor composed of numerous dilated and tortuous vessels, would certainly be a most dangerous operation, since it could not fail to be followed by severe hemorrhage, always difficult to arrest and sometimes fatal."

Skey (Operative Surgery) says: "Cases are recorded in which danger from hemorrhage, and even death, have followed removal by the knife."

Of this plan of operation I have no personal experience. I think, probably, the success of many surgeons during the latter part of the last, and the early part of this, century by this method, is owing to the fact that many cases of external piles, many of which are merely extravasations of blood into the connective tissue outside the sphincter ani, were classed as piles, and entered into their tables as true hemorrhoids. I know of no surgeon since the days of Cooper who recommends the simple excision of internal piles.

The actual cautery used alone has long been abandoned as a cure for piles, but Dr. H. A. Reeves, Assistant Surgeon to the London Hospital, reports eighteen cases submitted to what he calls this operation for the immediate cure of piles (Lancet, Feb. 17, 1877). He says: "The term "*im-*

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mediate" is more strongly applicable to this than to any other method, for not only is the operation rapid, but the entire treatment is very short, as compared with the ordinary methods of treating hemorrhoids, viz., by nitric acid, ligature, or clamp and cautery." The operation is simply this: The pile is punctured to its base with a small, conical instrument, made to fit Dr. Paquelin's gas cautery. The instrument is used at a dull red heat, and gently rotated during extraction, for, if pulled out, the eschar will be pulled out with it, and bleeding may ensue. A pile the size of a walnut may require two or three punctures, and old, consolidated piles require to be punctured to their bases in order to coagulate the blood in the feeding veins. I do not know whether Mr. Reeves' example has been followed to any extent, but I should judge it, in many instances, to be a very useful proceedure.

Mr. Henry Smith, of King's College Hospital, in his Lettsomian Lectures, delivered in 1865, recorded thirty-five cases of internal hemorrhoids treated by a screw clamp, of his own invention, and cautery. His lectures and method of operating received sharp criticism in the "British and Foreign Medico Chirurgical Review," and other British and Continental medical journals, amongst them, the "Union Medicale." In September, 1866, a year after the publication of the first cases, he published a second series of thirty-five cases, without a single fatality, and without any untoward events in the convalescence of the patients. The average time for recovery in his cases was not quite five days, and if one or two cases of severe prolapse were rejected, it would bring the average to a much less figure.

CASE I.—Mr. R. R——, a severe sufferer from asthma, was much troubled with piles. All the palliatives I could think of were employed without avail. I operated with Smith's clamp and cautery on February 16, 1868. He kept his bed six days, and got up quite well, and remained well till his death, which occurred one year later from pneumonia.

CASE II.—Mrs. Y——, 40 years of age, had suffered several years from piles, which had first come on during pregnancy. In May, 1869, removed two large piles by clamp and cautery. Was up in four days, and has had no relapse.

These are the only two cases of my own operated on in this manner, and they were both eminently satisfactory; but I find it difficult to persuade patients that the actual cautery is a manageable agent, and but few will submit to it.

The operation is simple. If the bowel is not prolapsed, the patient being anæsthetised, the pile is drawn below the sphincter by means of a small tenaculum, seized by the base with the clamp, the seizure being made in the direction of the axis of the rectum; the pile is then cut off

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by scissors, leaving a quarter of an inch of tissue beyond the clamp. The actual cautery, at a dull red heat, is then applied till the tissues are thoroughly cauterized; the clamp is then carefully unscrewed, watching for hemorrhage, lest any point of tissue remain untouched and the parts allowed to slip back in their place. I think this procedure most applicable where prolapsus co-exists with hemorrhoids.

A very remarkable case of complete cure of prolapsus by this operation was recorded by the late Prof. Freer, in the Chicago Medical Journal, I think, for 1867 or 1868.

The ligature has long been popular in the profession for the removal of hemorrhoids.

Mr. Allingham (Diseases of the Rectum) gives the ligature the preference over any other means for the cure of piles. He applies it around the base of the tumor, without transfixion. Mr. Skey uses constriction by means of Gooch's canula, for a time, varying from half an hour to an hour or more, till death of the part takes place. He then removes the pile, and removes the constriction from its base.

Samuel Cooper (Surgical Dict.) preferred the ligature in tumors situated high in the bowel, and when the base was broad, operated by transfixion.

Miller, in his Practice of Surgery (390), deprecates the use of knife or scissors, except where the piles have become consolidated, and, except in such rare instances, used only the ligature, simply applied about the pile, if attached by a narrow base, and by transfixion, if necessitated by a broad attachment.

Prof. Gross strongly recommends the ligature as safe, simple and certain, but mentions a case in which it was followed by metastatic abcess and death.

Samuel Ashurst (American Journal of Medical Science, 7,) mentions three cases in which tetanus has followed ligation of hemorrhoids, but says a like occurrence has frequently followed a simple scratch, and the likelihood of its occurrence cannot be taken into consideration by the surgeon as amongst the probabilities which should influence his prognosis.

W. H. Van Buren, in his useful and eminently practical little book entitled, "Diseases of the Rectum," recommends the ligature, and gives very minute directions for its application. He gives two directions of much practical importance, and which I have seen mentioned by no other author. First, if the operation is done under anæsthetics, before proceeding with the operation proper, make a forcible dilation of the sphincter, which will give free access to the interior of the bowel; and, second, include in your ligature as little as possible of the delicate semi-mucous tissue, found at the verge of the anus, or if this tissue must be

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invaded, cut in it a groove with knife or scissors in which to lodge the ligature. Then operate by transfixion, carrying the needle as far within the bowel as possible, and guarding the point of it by the fore finger of the left hand.

CASE III.—S. C——, merchant, had suffered from piles for ten years; they had rendered life a burden and business an impossibility. Operated by ligature, Aug. 16, 1872. Tied two large ones by transfixions, leaving two other smaller ones unmolested. The operation was done without anæsthetic, and he suffered very severely for three days, from the pinching of the mucous membrane. In six days he was able to be in his store attending to business, and has continued well ever since. There was no retention of urine, or other bad symptoms, except pain, during convalescence.

CASE IV.—Christopher C——, middle age, farmer. Sent for me March 14, 1876. Found him unable to leave his bed, from piles, which were protruded in a mass as large as a hen's egg, inflamed and excessively tender. Prescribed ice to the part, and a purgative. Operated March 16, 1876, by ligature, using the precaution of cutting a groove in the mucous membrane, as recommended by Dr. Van Buren, ligating three tumors. March 17, patient very feverish; has had a restless night; parts very painful; increased the dose of morphia to ¼ grain every two hours till relieved, passed catheter, no water having been passed since the operation. On the 18th, catheter again, but painless. On the 19th, copious hemorrhage from the bowel, which was only controlled by Mr. Allingham's method of plugging the rectum with a soft bell shaped sponge through the centre of which a stout ligature had been passed, packing well up to it with bits of cotton saturated with chloride of iron, and then compressing the whole tampon by drawing the centre of the sponge down by means of the ligature. This was quite effectual, and the patient made a good recovery, and has since, although far from a careful liver, had no relapse. Retention of urine necessitated the use of the catheter in this case for six days.

Piles have frequently been removed by the ecraseur. To perform this operation, after having drawn the tumor down, cut a slight groove around it with a scalpel, lodge the chain in the groove, and gradually tighten it till the pile is crushed off. Drs. Gross and Miller (Am. Ed.), mention this instrument without recommending it. I have seen it used by Prof. Craik and Dr. Reddy, in the Montreal General Hospital. It seemed to do its work well, and to be followed by no bad effect, but it is said its use is more likely to be followed by stricture, than the other methods.

Prof. Bichet, Hotel Dieu, is an advocate of the ecraseur, claiming for it less liability to hemorrhage, than by any other plan. (In. Hosp. Gazette Med. News.)

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Attention has recently been called to the treatment of piles by injections into their substance through the investigations of Prof. Andrews, of Chicago, who has collected from 300 physicians the histories of 3,300 cases of treatment by injection of carbolic acid, and recorded his deductions in the Chicago Med. Journal, May, 1879. The plan seems to be a safe one. He says:

1st. Inject only internal piles.

2d. Use diluted forms of the remedy at first, stronger ones if these fail.

3d. Treat one pile at a time; allow from four to ten days between operations.

4th. Inject one to six drops; havingly previously smeared the parts with cosmoline, to guard against dripping. Inject slowly and keep the pipe in place a few moments, to allow the liquid to become fixed in the tissues.

5th. Confine the patient to bed the first day, and also subsequently, if any dangerous symptoms appear; prohibit any but moderate exercise during treatment. The proportions he recommends are one part acid carbol, to thirty glycerine or olive oil, and from that to the strength of equal parts.

Some empirics have been traveling through the Western States using this as a secret process for the cure of piles, and relieving their patients of both hemorrhoidal piles, and piles of greenbacks thereby.

CASE V.—Jno. C——, aged 27, applied to me Sept. 15th. Injected one large pile with about 10 drops of a solution of carbolic acid, in glycerine, 1 to 20. There was but one pile, about as large as a walnut, inflamed tense, and painful. The part being smeared with lard, was carefully returned to the bowel. Some pain and smarting followed for two days. The bowels were moved by castor oil on the third day, since which time he has felt neither pain nor uneasiness from this cause.

Injections with ferric chloride, and ferric styptic, have been proposed and practiced, but have never met with very general favor.

Langenbeck has injected ergotine into the sub-mucous tissue of the rectum with success, but some cases were followed by abcess, and Dr. William Semple (Virginia Medical Monthly) gives a case in which fluid extract ergot, hypodemically injected, cured not only the piles, but also an enlarged spleen of many years standing.

Dr. Orr and Dr. Connor (Cincinnati Medical Monthly) report a case of cure from one-half drachm of the fluid extract in half a wineglassful of water, simply thrown into the rectum twice daily. It seems to me that this plan of injecting piles may possibly give rise to embolus by the conveyance of small clots into the circulation.

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Lastly, I would call your attention to a procedure recommended by Prof. Barker, in his book on "Puerperal Diseases," in cases in which piles appear before or during labor, and are likely to complicate the "getting up," of the woman. He says: "My patient being fully under the influence of chloroform, I select the movement after the delivery of the child and before the expulsion of the placenta. I push back the tumors, or, if that is impossible, I leave them alone, introduce the thumbs, back to back, well within the sphincter, and separate them as widely as possible, thus dilating and perhaps rupturing some fibers of the sphincter. This proceeding removes the constriction from the piles and allows their spontaneous subsidence, and the sphincter in a few days regains its natural contractility.

Finally, each operation will have a value in the cases most suited to it. The plan of excision cannot, I think, be recommended in any case of internal piles.

Clamp and cautery is a method most applicable to cases of piles with prolapse of the rectum, where it may be necessary to remove not only the pile but the redundant folds of membrane which otherwise cause pain and uneasiness.

The immediate plan of Mr. Reeve is probably suitable in cases where the pile is single with no prolapse of the rectum.

The principal objection to the ligature is the pain it causes; its advantages are its simplicity, and the ease with which patients are persuaded to submit to it.

The ecruseur is a good instrument for piles, the objections to it are that the operation is long, necessitating the sustaining of the anæsthetic state for a considerable time, and its liability to form a hard cicatrix which may produce stricture of the rectum.

The operation by injection is still "*sub judice.*" I think it will be most useful in cases of single or multiple piles without prolapse, and I think a good precaution in its use would be to clamp lightly the base of the pile, to effectually prevent the carrying of any small clots into the circulation.

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ARTICLE XIII.—CONSTITUTION AND BY-LAWS OF THE STATE MEDICAL SOCIETY OF WISCONSIN.

PREAMBLE.

We, the undersigned, physicians and surgeons of the State of Wisconsin, in order to cultivate harmony and kind feeling among the members of the medical profession, to promote the advancement of the medical and collateral sciences, and to assist us in acquiring a knowledge of the same, and in keeping pace with the progress of medical science; to help us appreciate the magnitude and nature of the mutual duties and responsibilities existing between the medical profession and the community, and to protect ourselves and society against the impositions of medical pretenders, do hereby agree to associate ourselves together, and be governed by the following

CONSTITUTION.

ARTICLE I. This organization shall be known by the name of the State Medical Society of Wisconsin.

ART. II. The Society shall meet annually, on the first Tuesday of May or June, as may be directed by the Secretary, at 8.00 o'clock, P. M., in the place designated by the Society at its previous meeting.

ART. III. Seven members of this Society shall constitute a quorum for the transaction of business, but any number may adjourn from time to time.

ART. IV. The officers of this Society shall be a President, a First and Second Vice-President, a Secretary, a Treasurer, and three Censors, who shall be elected at the annual meeting, and hold their offices respectively for the term of one year (except the Censors), and until their successors in office are duly elected and qualified. The Censors shall be elected for three years, one to be elected annually, and at the first election following the adoption of this amendment, one shall be elected for the term of one year, one for two years, and one for three years.

ART. V. The President shall preside at the meetings, preserve order and decorum in debate, give a casting vote when necessary, and perform all the other duties that custom and parliamentary usage may require, and deliver an address at the close of his term of office. He may call *special meetings* at any time, if he deem it necessary; and it shall be his

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duty to call such meetings whenever requested in writing to do so by five members of this Society.

ART. VI. In case of the absence or inability of the President to discharge his duties, the latter shall devolve upon the Vice-Presidents, and in the order of their election.

ART. VII. The Secretary shall record the minutes and authenticate the proceedings, give due notice of all meetings, conduct the correspondence of the Society, preserve all records and papers belonging to the Society, and at the close of his term of office shall lay before the Society a full report of his official correspondence and doings.

ART. VIII. The Treasurer shall collect and receive all moneys due or presented to the Society, and shall disburse the same under its direction. He shall keep a book in which he shall enter the debits and credits of every member, the amounts received and distributed by him as Treasurer, and shall, at the expiration of his term of office, and at any other time, when requested to do so by the Society, report the condition of the Treasury. He shall also give good and sufficient bond to the Secretary, in behalf of the Society, for the faithful discharge of his trust.

ART. IX. The Censors shall constitute a committee for the examination of applicants for membership, but shall entertain no petition for membership unless the applicant shall appear in person and present the certificate of two respectable physicians, living in the immediate vicinity of said applicant, as to moral and professional character. They shall also examine candidates for the study of medicine, as to their educational qualifications; these qualifications to be at least a good knowledge of English and of mathematics; and no member of this Society shall receive a student into his office until such student shall present a certificate from the Board, stating that he has the necessary preliminary education.

ART. X. Any regular physician making application for membership in accordance with the provisions of Art. IX, and who shall present a diploma from a regularly organized school of medicine of good repute, or a certificate or diploma of membership in a county or district medical society, accompanied by a certificate of six years' practice, or who shall submit to such an examination as the Censors may impose, shall, on their recommendation, and on receiving a vote of two-thirds of the members present at any annual meeting, be entitled to membership by signing the Constitution and paying five ($5) dollars to the Treasurer of the Society.

ART. XI. This Society may elect honorary members at any annual meeting, by a vote of three-fourths of the members present.

ART. XII. All regularly organized County Medical Societies in this State may elect delegates to this Society in the ratio of one for every five of its members, and such delegates shall, on payment of the annual dues,

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be entitled to all the privileges of membership in this Society during the time for which they are elected.

ART. XIII. This Society shall have power to obtain funds by an equal assessment of its members, by voluntary contributions, and by the sale and disposal of publications and of works for publication; but no assessment shall be made for more than three dollars upon each member in any one year, nor except at annual meetings, or at meetings called for that express purpose; in the latter case the object of the meeting shall be set forth and published in the call.

ART. XIV. This Society may censure, reprimand, or expel any member for improper conduct, as may be prescribed by the By-Laws.

ART. XV. No amendment shall be made to this Constitution, unless the proposed amendment shall have been submitted in writing at some previous regular meeting of the Society, and for such action eight members shall be necessary for a quorum, and two-thirds of the members present must vote for the amendment. *Provided*, however, that by a unanimous vote of ten or more members present at any annual meeting, any article of this Constitution may be amended or repealed, and articles added thereto without such previous notice.

BY-LAWS.

RULES OF ORDER.

ART. I. In the discussion and disposition of all business coming before the State Medical Society of Wisconsin, parliamentary rules of debate shall be observed, and Jefferson's Manual shall be the guide.

ORDER OF BUSINESS.

ART. II. The order of business at the annual meetings of the Society shall be as follows:

1. The calling of the roll.
2. The reading of the minutes.
3. The admission of members.
4. The Secretary's and Treasurer's reports.
5. The reading of essays and reports from all Standing Committees.
6. The reading of essays and reports of cases.
7. Miscellaneous business.
8. Unfinished business.
9. The election of officers.
10. The appointing of Standing Committees.
11. The President's Address.
12. Adjournment.

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FORCE OF THE CODE OF ETHICS.

ART. III. The Code of Ethics heretofore adopted by this Society from the American Medical Association, shall have the full force of any article of either the Constitution or the By-Laws.

DISCIPLINE OF MEMBERS.

ART. IV.—SEC. 1. Any member shall be liable to censure, suspension, or expulsion, for willful neglect of the rules and regulations of this Society, for any flagrant violation of our code of ethics, or for any gross or immoral conduct. A vote of two-thirds of the members present shall be requisite to censure, to suspend, or to expel.

SEC. 2. Should any charges be preferred against any member which might lead to his censure, suspension, or expulsion, such charges shall be preferred while the Society is in special executive session, and the Secretary shall immediately give the accused a written copy of the said charges, and state by whom preferred. The matter shall then lie over until the next annual meeting, when due action shall be taken thereon.

SEC. 3. Any member of this Society, who, from professional incompetency, or from any other sufficient reason not already mentioned, shall be deemed unworthy of the fellowship of this Society, may be deprived of his membership as provided in sections one (1) and two (2) of this article.

SEC. 4. Any member of this Society who shall absent himself from the meetings of the same for three successive years, without rendering to the Society a satisfactory excuse, shall lose membership in the same, but may renew his standing by repayment of the admission fee.

SEC. 5. Any member failing for a period of three years to pay to the Society the sum of three ($3) dollars annual dues, shall also lose membership in the Society, unless such member shall have removed from the State, in which case he may remain an honorary member thereof during such absence. The annual dues of the Secretary are remitted.

SEC. 6. If any member of this Society, to whom has been assigned any duty, such as the preparation of a report, or the reading of an essay, or like service, shall fail to perform such duty at the time assigned, he shall be relieved therefrom, but the duty assigned shall be due from him at the next meeting of the Society thereafter, and if he then fail to perform the service required of him, without rendering a satisfactory excuse for such neglect, he shall lose his standing as a member of this Society.

STANDING COMMITTEES.

ART. V. The following named Standing Committees, each to be composed of three members, to be appointed by the President—except the

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Committee on Ethics and Publication, otherwise provided for—shall be organized at every annual meeting, for preparing, arranging, and expediting business for each next ensuing year, and for carrying out the objects of the Society not otherwise provided for, namely, a Committee on Ethics, a Committee on Arrangements, a Committee on Practical Medicine, a Committee on Surgery, a Committee on Obstetrics, a Committee on Finance, and a Committee on Publication.

The Committee on Ethics shall be composed of nine members, who shall be nominated by the President, and elected by the Society. Three of the number shall serve for a term of three years, three for two years, and three for one year after the first election; thereafter, three shall be elected annually for a term of three years. They shall consider all cases for discipline of members. All charges made shall be referred to them without discussion; all evidence shall be presented to them, and they shall report their conclusions to the Society.

The Committee on Arrangements shall provide suitable accommodations for the meetings, and for the members from abroad, and, in general, attend to the wants of the Profession while attending the meetings of the Society.

The Committee on Practical Medicine shall make an annual report, embodying the recent and most practical improvements, discoveries and advancements in the practice of medicine.

The Committee on Surgery shall make an annual report on the subject of surgery, and give a summary of the recent improvements, discoveries and progress in this department of medicine.

The Committee on Obstetrics shall make an annual report on the subject of obstetrics and the diseases of women and children, giving a summary of the recent discoveries and improvements in this branch of medicine.

The Committee on Finance shall be the Executive Committee of this Society, to whom all accounts must be referred, and who shall make an annual report on the financial condition of the Society, and on all matters usually falling to the consideration of executive committees.

The Committee on Publication shall be composed of the Secretary, Treasurer and President, who shall have charge of all matters intended for the press, and superintend their publication.

The reports of all standing committees shall, on their reference to the Publication Committee, be published in the Transactions of the Society. All other, or voluntary reports or papers, shall be referred to the committee under which the report or paper would properly fall, and such committee shall decide upon the publication of papers so referred. The

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publication of any paper is not to be understood as necessarily an endorsement by the Society of the views contained therein.

MEMBERS TO REPORT CASES.

ART. VI. Every member of this Society who is neither appointed to read an essay, or to the chairmanship of a committee, shall give a complete detailed written history of one case of disease occurring under his own observation, comprising everything touching its etiology, pathology, symptomatology, nosology, diagnosis, prognosis, therapeutics and hygienics.

AMENDMENTS.

ART. VII. These By-Laws may be altered, added to, or repealed by a three-fourths vote at any annual meeting.

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ARTICLE XIV.—THE MEMBERSHIP OF THE STATE MEDICAL SOCIETY OF WISCONSIN.

Adams, H. D.....Beloit
Allen, Hamilton.....Oconto
Anderson, W. A.....La Crosse
Armstrong, L. G.....Boscobel
Bading, John P.....Milwaukee
Barnes, H. L.....Ripon
Barnett, J. R.....Neenah
Barrows, L. J.....Janesville
Barry, John S...Prairie du Chien
Bartlett, E. W.....Milwaukee
Bartlett, J. K.....Milwaukee
Bell, Samuel.....Beloit
Bennett, D. O.....Waterloo
Binnie, John .....Poynette
Bird, H. R.....Mifflin
Bishop, S. S.‡ .....Fond du Lac
Blair, W. M.....Darlington
Bliss, J. C.....Jefferson
Bond, D. M. ...Johnstown Centre
Booth, Charles E.....Elroy
Bordon, W. H.....Milton
Boughton, D. F.....Mendota
Bradshaw, H. N.‡ .....Monroe
Brenton, J. L.....Beloit
Brett, Ben C.....Green Bay
Brisfol, E. L. M.....Milwaukee
Broughton, R.....Brodhead
Buchan, A. L.....Union Grove
Burrall, George W.....Dodgeville
Burrington, S. O.....Columbus
Burroughs, F. V.*.....Mauston
Butler, Wm. C.....Janesville
Butterfield, H. L.....Waupun
Calkins, Geo. H.....Waupaca
Carley, D. W.....Boscobel
Catlin, Geo. E.....Geneva
Chase, H. A .....Viroqua
Clark, Almon.....Sheboygan
Clark, S. S.*....Menomonee Falls
Coakley, J. E....Milton Junction
Cody, James.. .....Watertown
Cowles, L. C.‡ ....Baraboo
Curtis, J. Wilber...Decorah, Iowa
David, Joseph W.‡ .....Highland
Davies, D. C.....Columbus
Davies, John E.†.....Madison
Davis, J. C.*.....Fort Atkinson
Davis, M. M.....Baraboo
Day, F. H .....Wauwatosa
De Hart, I. N.‡ .....Mendota
Dodge, E. F ... .Fond du Lac
Dodson, N. M.....Berlin
Dodson, B. F.....Berlin
Dorland, James.....Milwaukee
Dubois, Darwin*.....Lake Mills
Earll, R. W.....Columbus
Eastman, Wm.....Mineral Point
Egan, Charles.....Highland
Ellis, Edwin.....Ashland
Evans, T. W .....Stoughton
Favill, John.....Madison
Fischer, Francis*.... Madison
Fisk, M. H .....Depere
Fox, G. H.....Oregon

*Deceased. †Honorary Member. ‡Removed from State.

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Fox, Phillip.....Madison
Fox, William.....Milwaukee
Freeman, A. R.....New London
Fuller, S. L.‡ .....Milwaukee
Gage, M. R.... ..... Sparta
Galentine, Samuel.....Neenah
Gapen, Clark.....Mendota
Garry, John E... ....Stockbridge
Gee, J. E.....Brandon
Gleason, W. H .....Mazomanie
Goe, J. W.‡ .....Oshkosh
Godfrey, H. T..... ...Benton
Gorham, W. M.†.....Milwaukee
Grættinger, Alois.....Milwaukee
Griffin, E. L.....Fond du Lac
Guernsey, A. H.....Amherst
Hall, Samuel.....Reedsburg
Hall, Storrs.....Rosendale
Hall, J. C.....Monroe
Hamilton, I. P.....Darlington
Hasse, Herman E.....Milwaukee
Hausman, William .....Ashford
Hawley, R. W.....Milwaukee
Hobbins, Joseph.... ....Madison
Hobbins, William.....Madison
Hoegh, Knut.....La Crosse
Hopkins, J. F.....Oconomowoc
Horton, E G.....Whitewater
Hunt, Geo. F.....West Bend
Hutchinson, Geo..... .Durand
Irwin, E. H.....Lodi
Jenkins, G. W.....Kilbourn City
Johnson, S. C..... ...Hudson
Johnstone, John.....Neosho
Kendall, A. O.‡ .....Middleton
Kempster, Walter.....Winnebago
Ladd, G. D.....Milwaukee
Lawrence, Amos.....Oshkosh
LaCount, D.....Chilton
Leavitt, Justin J.....Fennimore
Leonard, Wm. T.‡ .....Wonewoc
Lewis, Frank L.....Arcadia
Linde, Christian.....Oshkosh
Linde, F. H.....Oshkosh
Lindsay, H. E.....Avoca
Loomis, E. E.....Janesville
Loomis, G. T.....Cascade
Lueck, A. W.*.....Mayville
Luehmann, F. S.....Two Rivers
Lynch, Daniel W.....Richfield
Mack, J. A.....Madison
MacNeill, J. E.‡.....Mauston
Mann, H. E.....Marinette
Manly, Ira, Jr.....Markesan
Marden, F. A.....Milwaukee
Marks, Solon.....Milwaukee
Marston, S. L.....Campbellsport
Mason, Darius.....Milwaukee
Masterson, J. A.....Waterloo
McCall, William*.....Omro
McKnight, Lewis.....Milwaukee
Meachem, E. H. G.....Milwaukee
Meachem, J. G.... .....Racine
Meachem, J. G., Jr.....Racine
Meacher, Wm.... .....Portage
Miller, D. McL.....Oconomowoc
Miller, Clark I.....Whitewater
Mitchell, John†.....Janesville
Monroe, Wm.....Monroe
Moore, D W.....Waupun
Moore, J. R.....New London
Moorehouse, W. D.....Plymouth
Myers, Miles G.*.....Wautoma
Newel, G. E.....Waterford
Nichols, Theron‡ .. ..Milwaukee
O'Brien, J. N..... Waupun
O'Connell, R. S..... .....Cato
Orrick, J. H.*.....Stevens Point
Ottillie, Chas.... .....La Crosse
Page, J. L ..... .Racine

*Deceased. †Honorary Member. ‡Removed from State.

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Palmer, Henry.....Janesville
Phillips, B. T...Menomonee, Mich
Plagemann, Henry.....Woodland
Pritchard, J. F.....Manitowoc
Raymond D. A.†.....Fond du Lac
Reeve, J. T..... ..... Appleton
Regan, J. N.....Oconomowoc
Reynolds, B. O.....Geneva
Reynolds, F. L.....Neosho
Reynolds, J. C.....Geneva
Rice, John A.....Merton
Riddell, S. S.....Chippewa Falls
Robbins, C. W.....Milwaukee
Rockwell, W. M.....Johnstown
Rogers, E. M.....Hartford
Rogers, Jirah.....Ripon
Rowley, A. A.....Middleton
Rundlett, J. R.....Postville
Russell, J. A.....Cedarburg
Russell, T. P. .....Oshkosh
Schorse, William.....Milwaukee
Seiler, George,.....Fountain City
Selden, O. G.‡ .....Reedsburg
Senn, Nicholas.....Milwaukee
Shepard, J. L....Sheboygan Falls
Smith, C. M.....Evansville
Spalding, W. C.....Watertown
Sperry, Johnson*..... ..Delafield
Stair, T. F.....Mazomanie
Stair, U. P..... ....Black Earth
Stanard, F. D.....Martinville
Stansbury, Emory.....Appleton
Stark, Geo. A.....Milwaukee
Stark, Theodore F.‡ ...Milwaukee
Steele, Geo. M.....Oshkosh
St. John, J. W.....Janesville
Stoddard, C. L.....La Crosse
Strong, H. P.....Beloit
Terhorst, H..... ....Richfield
Thomas, W. M. .....Darlington
Thompson, J. H.....Milwaukee
Thorndyke, Wm.....Milwaukee
Van Buskirk, Joseph ‡.....Elroy
Van Dusen, Harmon..Mineral Pt.
Van Dusen, W. H.....Montfort
Vittum, W. H.....Baraboo
Vivian, J. H.....Mineral Point
Walbridge, J. S.....Weyauwega
Ward, A. J..... ...Madison
Waterhouse, M.*....Portage City
Wenzel, H. P.....Lomira
Wheeler, A. L.....Spring Green
Whiting, J. B.....Janesville
Whyte, W. F.....Watertown
Wigginton, R. M.....Watertown
Wight, O. W.....Milwaukee
Wilber, Geo. D.....Mineral Point
Williams, J. Ll.....Cambria
Williamson, R. H.....Milwaukee
Wing, Charles E.....Hartford
Witter, G. F .....Grand Rapids
Wolcott, E. B.*.....Milwaukee
Woodworth, L. P.‡ .. ...Necedah
Woodworth, T. F.‡ .....Janesville
Wright, A. B..... ...Oshkosh
Youmans, H. A.....Mukwonago
Young, Geo. H.....Elkhorn
Zielly, H. E.....Chilton
Zinns, A. J.....Milwaukee

*Deceased. †Honorary Member. ‡Removed from State.

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VOLUME XV.

TRANSACTIONS

OF THE

STATE MEDICAL SOCIETY

OF

WISCONSIN,

FOR THE YEAR 1881,

WITH ITS

CONSTITUTION AND BY-LAWS,

AND A LIST OF ITS MEMBERS.

Medicina Nusquam Non Est.

MILWAUKEE.
PRINTED BY THE SENTINEL CO.
1881.

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STATE MEDICAL SOCIETY OF WISCONSIN.

OFFICERS FOR 1881-82.

President,

DR. WILLIAM MEACHER, Portage.

Vice-Presidents,

DR. F. H. DAY, Wauwatosa.

DR. C. LINDE, Oshkosh.

Secretary and Treasurer,

DR. J. T. REEVE, Appleton.

Censors,

DR. J. K. BARTLETT, Milwaukee.

DR. WM. THORNDIKE, Milwaukee.

DR. D. MASON, Milwaukee.

STANDING COMMITTEES.

Arrangements—Drs. H. Van Dusen, J. H. Vivian, Wm. Eastman.

Surgery—Drs. K. Hoegh, M. H. Fisk, A. R. Freeman.

Practice—Drs. G. W. Jenkins, G. F. Witter, E. H. G. Meachem.

Obstetrics and Gynecology—Drs. D. Mason, S. S. Riddell, Philip Fox.

Pathology—Drs. N. Senn, W. C. Butler, M. M. Davis.

New Remedies—Drs. R. M. Wigginton, C. W. Robbins, J. P. Bading.

Ophthalmology—Drs. E. W. Bartlett, Charles Ottilie, C. L. Stadler.

Finance—Drs. S. Marks, N. Senn, E. F. Dodge.

Ethics—For Three Years: Drs. J. K. Bartlett, J. B. Whiting, J. Faville.

For Two Years: Drs. Meachem, Sr., E. L. Griffin, S. L. Marston.

For One Year: Drs. H. P. Strong, P. Fox, G. F. Hunt.

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The next meeting of the State Medical Society of Wisconsin will be held in the City of Mineral Point, commencing on the first Tuesday in May, 1882.

The reports of all Standing Committees shall, on their reference to the Publication Committee, be published in the Transactions of the Society. All other or voluntary reports or papers, shall be referred to the Committee under which the report or paper would properly fall, and such Committee shall decide upon the publication of papers so referred.

The publication of any paper is not to be understood as necessarily an endorsement, by the Society, of the views contained therein.

Resolved, That no papers shall be read before this Society, when in annual meeting, that will take more than twenty minutes to read; if longer, a synopsis must be given, and the essay must be referred to the Committee on Publication.

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TRANSACTIONS

OF THE

STATE MEDICAL SOCIETY OF WISCONSIN

FOR THE YEAR 1881,

BEING THE THIRTY-FIFTH ANNUAL SESSION.

ARTICLE I—PROCEEDINGS.

MILWAUKEE, June 7, 1881.

The State Medical Society of Wisconsin convened in its Thirty-Fifth Annual Meeting, at the Court House, in the city of Milwaukee, on Tuesday, June 7, 1881, at 8 o'clock P. M.

The Society was called to order by Vice-President Dr. B. O. Reynolds, and the proceedings were opened by prayer offered by Rev. G. E. Gordon.

Dr. Ira Manley, Jr., President of the Association, then delivered the Annual Address, upon the "Influence of the Mind upon the Body," after which, by vote, the thanks of the Society were tendered to Dr. Manley, and the address was referred to the Committee on Publication.

The Committee on Arrangements then presented its report, as follows:

The Committee of Arrangements has, for the third time, the pleasure of welcoming here the State Medical Society on the occasion of its thirty-fifth annual session. The county officers have again favored us with the use of this convenient and central place of meeting. We have tried, by conference with the railroad and hotel authorities, not only to "welcome the coming and speed the parting guest," but to make him comfortable while here.

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We would recommend as suitable hours for daily meeting, 8.30 A. M., 2.00 and 7.30 P. M.

To-morrow evening we invite the Society to an open air concert of choice music at Schlitz Park, where a social, enjoyable time may be confidently expected.

The Committee submit this report in the full expectation that this annual convention will be one of interest and profit to ourselves, and of benefit to those who, in sickness, look to us for advice and help.

On motion, the report of the committee was accepted, and the recommendations therein embodied were adopted for the government of the Society during the session.

Dr. E. W. Bartlett presented an invitation from the superintendent of the Milwaukee County Insane Asylum, asking the Society to visit that institution at its convenience.

On motion, the invitation was referred to the Committee on Arrangements.

On motion, the Secretary was authorized to employ a stenographer to report the proceedings of the Society during the session, after which the meeting adjourned until 8.30 A. M., of June 8th.

WEDNESDAY, June 8th, 8.30 A. M.

The President, Dr. Manley, called the Society to order.

On motion of Dr. Wenzel, it was ordered that, inasmuch as the proceedings of the Society at its last annual meeting had been printed at length in the published volume of Transactions for 1880, the formal reading of the minutes be omitted.

On motion, Dr. J. P. Bading was elected Assistant-Secretary.

The reports from Standing Committees being the regular order of business, the Committee on Surgery was called upon, and reported through Dr. Senn, who said:

As chairman of the Committee on Surgery, I wish to present for your consideration and discussion, a short resume of this, the most interesting branch of our profession. I have found it an exceedingly difficult task to look over this great field and present it to you in such a brief form as to occupy not more than twenty minutes. I have been unable to condense it to that extent; consequently, if I should occupy more than the allotted time, I shall ask the indulgence of this Society. I shall not read

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the whole paper, but will simply select a few of the most important topics, and illustrate what I have to say with a few pathological specimens. The cases I shall report verbally.

I have also two microscopical specimens for exhibition, which the members are requested to examine during leisure hours. One specimen represents a cancer of the mamma and axillary glands, exhibiting typical cancer tissue; the other is a case of osteo-sarcoma, which will give you a good opportunity of comparing the two typical forms of malignant diseases.

In one of these cases—the cancer of the breast—the patient was a woman about forty-five years of age, who first noticed the appearance of the tumor about a year and a half ago. There was marked retraction of the nipple, the tumor was dense and hard, and, on examining the axilla, I found a number of enlarged glands. I concluded to operate according to the new method inaugurated by Esmarch, by removing, with the breast, the whole chain of axillary glands, healthy and diseased. You will notice the chain of glands about five or six inches in length, extending from the breast to the upper margin of the first rib. After circumscribing the tissues around the nipple by two elliptical incisions, a straight incision was extended into the axilla. The first step in the operation consisted in bringing to view the axillary vein in the apex of the axillary space. This being done, I found a great many more enlarged glands, than had been revealed by the external examination. By examining this specimen, you will notice that the largest glands are in close proximity to the breast, and, as you ascend, they become smaller and smaller—glands that we could not have detected without making an incision in the axilla. The dissection being commenced at the margin of the first rib was continued downwards, removing first the axilla glands, and lastly the breast. This is the kind of operation now almost universally performed in Germany.

Dr. Whiting: I would like to ask whether the results of those operations are satisfactory.

Dr. Senn: Yes, I think so. I am a firm believer in the local origin of cancer, and if you can remove completely the seat of the disease, there will be no recurrence.

The question is, whether in this case I have removed all of

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the diseased tissues. I think I have cleaned out the entire axilla, but, as I mentioned before, there were small glands about the size of a hempseed, perhaps a little larger, at the upper margin of the first rib, and that was the limit of the operation. I could not extend it any farther.

Dr. Whiting: How many times has that operation been performed in this country? Is it a common operation?

Dr. Senn: It is not a common operation. I have no statistics of the comparative results. It is the result of a firm belief in the local origin of cancer. The axillary glands were examined, and you will notice in the specimen, under the microscope, particles showing the characteristic structure of epithelial cancer. An immense cavity was left under the axilla after removing its contents, diseased and healthy. To provide for free drainage in this case we used bone drainage-tubes. The best pathologists of the present day consider cancer a purely local disease, produced in most instances by a local cause or causes.

I have performed ovariotomy during the last year seven times, and, of course, always under strict antiseptic precautions. Of these six recovered without any evidence of inflammation or much constitutional disturbance, and one died. In this last case death was not the result of the operation directly, but of complications which existed at the time of the operation. As I believe that we ought to benefit by the mistakes of others, I desire to report this case. It was that of a woman sixty-two years of age, very obese, but who otherwise presented all the evidences of good health. She was a widow and had borne several children. She detected the existence of a tumor about twenty-three years ago. It grew very slowly, but during the last six months gave rise to considerable disturbance, so much so, that life became a burden to her, and she was willing to take the chances of an operation, although it was explained to her it would be a very serious one in her case, as I expected universal and firm adhesions. After making the incision through the abdominal wall, it was found very difficult to ascertain the space between the peritoneum and the cyst, as the adhesions in that locality were very firm. After exposing and tapping the cyst, I began to separate the adhesions upwards. On doing so I came in contact with a large mass of omentum, and in separating this

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very carefully — no undue violence being used — to my utter astonishment I noticed on the surface of the cyst, where I had separated the adhesions, a patch of the mucous membrane of the intestines, measuring perhaps half an inch in diameter, and an inch and a half in length, which was very good evidence that I had ruptured the bowel. Under the circumstances this accident was a very undesirable complication, but we had to make the best of it. I ligated both ends of the intestines to prevent the escape of its contents into the peritoneal cavity and proceeded to enucleate the cyst, which was firmly adherent all around. It was attached, or appeared to be attached, to the left side, that is, the left ovary, but we found no well-marked pedicle, and consequently we worked constantly at the expense of the cyst wall, and enucleated somewhat after the plan of Dr. Miner, arresting the hemorrhage as it occurred. After the cyst was removed, which occupied an hour, or a little over, I proceeded to remove the diseased and injured portion of the bowel, because I found that around the margin of this rupture the coats of the bowel were very thin. This part of the intestine had been adherent for a long time, and, from want of function, had undergone atrophic degeneration. The walls of the intestines were unusually thin, like paper, which, of course, explains to some extent the ease with which they ruptured. About an inch and a half of the bowel was removed with a corresponding portion of the mesentery. I brought the free ends of the bowel into apposition, invaginating the upper into the lower end to the extent of nearly an inch, and united the serous surfaces by means of about twenty sutures of Czerney's silk, which embraced both the serous and muscular coats. This is the specimen. The woman never rallied from the operation. There was some degree of shock after the operation was completed, for which she was given a small injection of morphine and alcoholic stimulants. In spite of all efforts she soon passed into a semi-comatose condition, and died about twenty hours after the operation. On making a post-mortem examination, I found, to my great satisfaction, that no peritonitis had taken place; no signs of inflammation were present. On removing this section of the intestines, I found that complete union had taken place between the serous surfaces. It was very easy for me to pass the finger into the upper end

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through the point of invagination. You will perceive that the wound is united all through. Had it not been for another complication, which I am about to mention, she would undoubtedly have recovered. On examining the kidneys we found them of unusual size. I have the kidneys here, and you will notice that they are nothing but a mass of cysts, varying in size from that of a pea to that of a large orange. The remaining kidney-tissue between the cysts has undergone fatty degeneration. The only wonder is that the woman could have lived so long and suffered so little from such an extensive degeneration of the secretory tissues of the kidney. I have no doubt that any slight disease would have been sufficient to produce a fatal result, on account of this defect in the kidneys. All the symptoms after the operation were those of shock and uræmia.

The Board of Censors here made a report, recommending for membership in the Society:

Dr. Albert W. Johnson, Chippewa Falls; graduate of Long Island Hospital College, 1880.

Dr. Isaac McComb, Brillion; graduate of Chicago Medical College, 1877.

Dr. I. W. Devoe, Wausau; graduate of Cincinnati Medical College, 1881.

Dr. Milo R. Hewitt, Pewaukee; graduate of Bellevue Medical College, 1869.

Also introducing Prof. S. J. Jones, delegate from the Illinois State Medical Society, and Drs. Watson and Hussey, delegates from the Iowa State Medical Society.

On motion, the report was accepted and the gentlemen recommended for membership were duly elected as members of the Society.

The delegates were then welcomed by the President in a few appropriate words, to which Dr. Watson responded, as follows:

Mr. President and Gentlemen:— On behalf of the Iowa State Medical Society, we cordially thank you for your kind greeting. We come as the first delegates from our own Society, but we hope only as pioneers, as forerunners of future delegations. We came comparatively as strangers, but have met with such sympathy that we feel we are among friends. We have listened to your proceedings thus far with deep interest, and anticipate being still more deeply interested in those that are to follow.

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Thirty-six years ago I entered the great west through your city, a lad of eighteen, and began the study of medicine at the future Athens of Wisconsin—the city of Beloit. Soon after my graduation I removed to Iowa, but I have watched the progress of medical science here from a point very near your own borders with sincere pride, and am very happy to meet to-day with so many representative men of the profession, so many who have lent a hand to build the edifice in which we all take pride.

By unanimous consent Dr. Senn was allowed to continue his report, and he then gave a brief verbal account of a case in which a portion of a soft catheter was removed by means of forceps, and without cutting, from the bladder of a boy, into which it had slipped by accident from the hand of a surgeon. The piece of catheter, seven inches in length, was exhibited to the Society, after which Dr. Senn continued: I have a patient here to show you on whom I operated three weeks ago for osteo-sarcoma of the upper portion of the humerus, removing about five inches of the shaft disarticulating at the shoulder-joint. The wound healed by primary union, without a drop of pus. You will notice a prominence over the deltoid, due to contraction of this muscle; as I was able to preserve only a limited amount of periosteum, I attempted to shorten the arm in order to establish its function as perfectly as was compatible with the loss of so much bone. You will notice that it is the deltoid muscle which is elevated here from its point of insertion, and the arm being so much shortened, you have this prominence. You see the extent of the incisions here, and the fine cicatrix. I might say that, looking over the statistics in the Medical and Surgical History of the War of the Rebellion, of the cases where more than two or three inches of the shaft of the bone was removed, with but very few exceptions, there was great impairment in the function of elevating the arm, and in some of them the arm was perfectly useless, but there was a fair use of the forearm in all cases. This tumor originated in the interior of the bone, and had attained the size of two fists. Under the microscope it presents a beautiful specimen of osteo-sarcoma.

Dr. Whiting: I should like to hear what the doctor has on fractures. We meet with them daily, and if the doctor has anything new to suggest to us I should be glad to hear, because it is the practical that our patients are interested in, and we are interested in the ultimate scientific facts connected therewith.

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Dr. Senn: I stated at the outset that I did not intend to give so much my own experience as the experience of men who have a greater field than myself, and all those cases I have mentioned here were simply verbally reported to render the proceedings more interesting and to render the reading of the report less tedious. I think it is the duty of the chairman of the section to look over the whole field, and select from the current literature practical material that will be interesting, and I have observed this rule in preparing this paper on fractures and dislocations.

Dr. Senn then read a paper entitled, "Fracture of the Nasal Bones."

Dr. Whiting: There are some things that I should like to inquire about, that we might profit thereby, if it is in order; and one is, while we all understand, I suppose, measureably, the antiseptic treatment and preparation, I want, in brief, Dr. Senn's personal idea of what thorough antiseptic preparation and dressing is.

Dr. Senn: In ordinary operations, you mean?

Dr. Whiting: Yes; for instance, in removing a cancerous breast.

Dr. Senn: This is a method of treatment which, I think, many fail to carry out thoroughly, and are, by consequence, only too often doomed to disappointment. I have reason to think that a great many members of the profession in our country have tried this treatment and have been led to abandon it on this account. I have practiced antiseptic surgery in the true sense of the word for many years, but am free to cŏnfess that for the first two or three years, although I was convinced of the truth of the teachings of Lister, I had frequently results which would lead me to suppose that the practice was erroneous, but, being so fully convinced of the truth of the principles upon which antiseptic surgery is founded, I persisted, and gradually obtained better results. I attributed my failure, not to the antiseptic treatment, but to myself. I think it is a method of treatment which requires an unusual amount of experience and close attention to minute details. Some of the directions given seem almost ridiculous to the majority of the profession, but I am free to assert that if you leave out one link in the chain, you

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cannot obtain, and are not entitled to, the results which can be obtained by good antiseptic surgery.

The first, and perhaps one of the most important conditions for a successful issue, is to disinfect the operating-room; that is, to have good, clean, healthy air about you. In cases of ovariotomy, or in any case where a severe operation is to be performed, I insist that the room shall be thoroughly disinfected before the operation is performed. I have all the carpets removed—there ought to be no carpet in an operating-room—the room should be well scrubbed, the ceilings, walls, and floor washed with a five-per-cent. solution of carbolized water, and the air disinfected by burning sulphur, or generating chlorine gas, which can be done by putting common salt in a porcelain vessel and pouring on sulphuric acid; close the room thoroughly and let that gas operate upon the air, walls and ceiling for at least twelve hours; then open the windows and let in fresh air. So much for the disinfection of the room. The next thing is the disinfection of the patient, or the surface to be operated on, which, I think, in most instances is done very imperfectly. I take it for granted that every patient to be operated on is unclean. The patients sometimes consider it an insult to undergo such a cleansing procedure, but we must insist upon it; and by a thorough cleansing, I mean the free and thorough use of soap and water; after this the surface is shaved, and I shave every surface, because shaving not only removes hair which exist almost everywhere, but likewise dried epithelial scales and other carriers of contagion. After I get through shaving the surface I wash it thoroughly with sulphuric ether to remove any fatty substances that may be deposited on the skin—a precaution that is not now insisted on so much as it was a few years ago. Lister claims now that for disinfection a five-per-cent. solution of carbolic acid is sufficient, but German surgeons still insist upon washing the surface with sulphuric ether In cases of excision of the breast I not only wash the parts about to be excised, but the parts around it. The axilla must be thoroughly shaved, and at least half of the thorax disinfected. In cases of extreme importance I do not rely simply upon washing the surface, but apply a compress saturated with a three-per-cent. solution of carbolic acid, for at least twelve hours previous to the time of operation.

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The next step is the operation itself. Of this I may say also, that a very important step is the disinfection of the surgeon's hands, which must be done with great care and thoroughness. The finger-nails are a nuisance to the antiseptic surgeon, and especially the cultivation of long nails. It is necessary to cut the nails very short so as to reach the parts beneath them readily with your brush. Long finger-nails have been the source of a great deal of mischief, not only in surgery but in obstetrics, having frequently served as carriers of infection. The antiseptic surgeon cannot claim success until he keeps his finger-nails as they ought to be—short and clean. The next thing is the disinfection of the surgeon's instruments, which must be completely immersed in a five-per-cent. solution of carbolic acid, for which purpose it is very convenient to have one of those long bowls of tin, or copper, which is best. I would divide the operations into those which should be performed under the spray, and those which can be performed by means of the irrigator. If I use the spray—which should always be used in operating on serous cavities, as the abdominal and pleural, or joints—I use a five-per-cent. solution, which, of course, being diluted with the steam, gives the proper two-and-one-half-per-cent. solution. In a case of ovariotomy, this spray ought to be made to work at least two hours before the operation, so as to fill the whole chamber with a carbolic spray. As to spray producers, the steam spray deserves preference, and at least two instruments should always be on hand. The next are the operations that can be performed without the spray. It is this question in regard to the necessity of the spray which has given rise to more opposition to the antiseptic treatment than anything else. Surgeons were loth to resort to the spray, because it is an apparatus which, if you have to carry about in your practice, is very inconvenient; hence, surgeons, especially the German surgeons, have been inventing every possible means to simplify the antiseptic treatment and do away with what they thought superfluous machinery. Brunns was the first one boldly to oppose the spray and substitute for it the irrigator. In New York last winter I had an opportunity to observe this treatment by the irrigator in the German hospital, and I became satisfied that ordinary operations, such as amputation, resection, removal of tumors, and other simple

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operations, can be done by means of the irrigator as safely as with the use of the spray. Usually, in a case of a recent wound, that is, a wound made during an operation, or a recent wound, it is sufficient to use a three-per-cent. solution; if you can get along with a weak solution of carbolic acid, it is advisable. If you use a strong solution, and have an extensive surface, there is some danger of intoxication from the use of the carbolic acid. The irrigator is simply a rubber bag or tin can with a rubber tube and nozzle, hung at a convenient height, and is used during the operation; especially in a long operation it is advisable not to wait until you have completed the operation and then disinfect; but at the time you are arresting hemorrhage you can conveniently use the irrigator, and so disinfect whatever germs may possibly have entered the wound; but the main thing, after you have completed the operation, is to be sure that this antiseptic solution is brought in contact with the whole wound and every part of the wound. If the smallest corner is left untouched you run the risk of infection; consequently, it is necessary to open the wound thoroughly; and it is always advisable, if you use the irrigator in place of the spray, to make your incisions unusually large, not only for the purpose of completely arresting the hemorrhage with ease, but also with a view of facilitating the application of the antiseptic solution to the whole surface of the wound. After thoroughly disinfecting the wound, you apply your sutures and drainage tubes. The drainage tubes which I am now in the habit of using are bone drainage tubes, especially in cases where I expect to obtain primary union. Care must always be exercised to introduce a sufficient number of tubes, and that depends upon the character and extent of the wound. You may have a large wound which may be easily drained with one drain, and you may have a small wound, especially where you have to operate against gravitation, where it is necessary to introduce a number of drains. My favorite suturing material is Czerney's silk. In a wound where you expect a union in two or three days, it may be safe to trust to carbolized catgut, but in any wound which requires longer than forty-eight hours I would not trust catgut, because those sutures become loose, and the result will be a gaping of the wound. Czerney's silk, thoroughly disinfected, is no irritant to living tissue. It may remain for

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several weeks without producing the least irritation; and then you are sure that the edges of the wound will remain in contact. After you have sutured and drained your wound, it becomes once more necessary to irrigate it. This you do by simply directing a current of the irrigator, through one or more of these drainage tubes, until the fluid returns clear; be sure that these drains are permeable. There is sometimes a great deal of damage done by trusting to these drains without testing them. One of these drains may become obstructed with coagulated blood and made impermeable, consequently it would be worse than useless. To prevent retention of the carbolized solution, you must make pressure upon the wound, either with a disinfected sponge or a salicylic cotton compress, so as to be sure that all the fluids have escaped; then you are ready to apply the dressing. The dressing consists, in the first place, if it is a wound where any raw surface is left, of protective silk or gutta percha tissue, well disinfected. It used to be customary to apply this protective to every wound, but recent investigations have shown that in a wound which you expect to unite by primary union, which leaves no raw surface exposed, it is superfluous to do this. You next apply what we call lost or moist gauze, which is simply antiseptic gauze saturated with a three-per-cent. solution of carbolic acid, wrung out and applied loosely over the wound, and for a considerable distance beyond it, about eight layers in thickness. It is advisable to apply it loosely, not paying any particular attention to the number of layers. Around the margins of this moist gauze, for the purpose of excluding atmospheric air, and at the same time exercising equable compression, I use salicylic cotton, which is simply absorbent cotton saturated with an alcoholic solution of salicylic acid, and dried. Over this part of the dressing it is necessary to apply a moist antiseptic roller. This application of the roller over the moist gauze is very important. Lister applies this dressing with a dry roller, but let me assure you that the advantages are great in securing perfect occlusion and even pressure by using the moist roller, as it applies itself more easily and smoothly than the dry roller. You are now ready to apply the compress of dry antiseptic gauze of eight layers, which must extend over a considerable distance beyond the surface of the wound. Between

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the last two layers you place what is called McIntosh cloth, previously disinfected in the carbolic acid solution; this may be retained with dry gauze or the ordinary roller. In order to secure the perfect adaptation of this dry gauze to the skin, you may apply ordinary cotton over the margins of the dry gauze. The rule is, after you have secured drainage, rest, disinfection, and antiseptic dressing, to keep the parts undisturbed until union has taken place, or unfavorable symptoms arise; and the best means to decide whether everything is going on satisfactorily and smoothly, is the thermometer. As long as the temperature remains normal, and as long as there is no considerable amount of pain, you have no right to disturb the dressing for the purpose of inspecting the condition of the wound. You may take it for granted, if the temperature is normal and the patient feels comfortable, that the progress is favorable, and consequently leave the dressing for at least four or five days, in ordinary cases; then you remove it, having the irrigator ready, when, if you find that primary union has not taken place throughout the entire wound, you must again disinfect the parts which have been exposed to atmospheric air, and re-apply the dressing in the same way. If you have applied the bone drainage tube, you will probably notice a dry ring, corresponding with the outer end of the tube. The dry ring is the end of the tube, the fluid of which has somewhat evaporated, leaving it a little dry and firm, just sufficient to keep the edges of the wound apart, while the part which is in the wound has absorbed moisture from the tissues around it, and is undergoing rapid absorption. This absorption, if the tube is well prepared, always takes place, provided you have no suppuration. Absorption is effected by the granulations, and it can only take place when healthy granulations arise, which push their way into the tube and disintegrate and absorb it. If the wound take an unfavorable course, infection, inflammation, and suppuration ensue. In this event the tube acts as a foreign body, and the sooner it is removed the better. As a foreign body, being organic in character, it is very likely to undergo decomposition, and assist in causing what you wish to avoid. One thing which I wish to allude to, in connection with this subject of Lister-dressing, is the securing of perfect coaptation of the edges of large wounds, for example,

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after excision of the breast. To guard against tension, the silver wire suture, with buttons, is of exceedingly great value. You have a long needle, and insert it in one edge of the wound, about two inches from the edge, passing through the wound and re-entering at a corresponding point at the opposite side, bringing it out at about two inches from the other margin of the wound. You thread the end of the needle with silver wire, and pull it back: both ends of the silver wire are passed through a perforated disc of lead, with a projection at each end, around which the wire is wound in a figure 8. These sutures will relieve all tension and enable you to approximate many wounds which you have been unable to bring in apposition with the ordinary sutures.

On motion, the report was referred to the Committee on Publication.

Dr. Riddell: In the practice of antiseptic surgery in the country, it would be almost impossible to carry the antiseptic machinery along with us, and carry it into effect. I find that in alcohol we have an antiseptic that answers all ordinary purposes. If you irrigate during the operation with a fifty-per-cent. solution of alcohol, or even weaker, it burns a little, but it thoroughly excludes all chances for germs. Alcohol is one of the finest antiseptics in the world, and I find if I take a recent wound, and thoroughly cover it with alcohol, wash it out, and bring it together with sutures, that I have no difficulty at all. Primary union will take place as often as in any other way. Even in excision of the mamma, by applying alcohol and sometimes a little tincture of opium with it, I have experienced good success. In compound fractures, or anything of the kind, I have, of course, used carbolic acid and carbolized oil frequently, but I like alcohol as an antiseptic.

Dr. Stansbury: I inferred from what Dr. Whiting said that there would be some discussion, especially on the subject of cancer. It seems to me rather unwise for the medical profession to meet and have a paper, which is of so much importance, read, a paper which changes the pathology entirely from the teachings of most of us, without having some discussion upon it.

Dr. Hoegh, from the same committee, here read a report of a case of Cystitis, which, on motion, was referred to the Committee on Publication.

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Dr. Riddell: Inasmuch as there seems to be a desire to discuss the report on surgery, I move to reconsider the vote by which it was referred to the Committee on Publication. Carried.

Dr. Senn: The Committee on Surgery have received the model of a splint. As the inventor is here, we recommend that he be given time now to describe the instrument. A motion to adjourn, made at this juncture, was withdrawn for this purpose, and Dr. G. F. Witter exhibited and described the model of an ingenious splint invented by him, and which he had found to be very convenient and useful in the treatment of fractures of the lower extremities. The doctor claimed for this splint (the outer and inner side pieces of which consisted of pieces of iron tubing, of two sizes, the smaller sliding within the larger and being fastened at any desired point by a set screw, thus enabling the surgeon to extend the splint to any desired length), unusual advantage in the methods of extension and counter-extension, especial ease of adjustment to limbs of differing size, or to either side, combined with facility for examination of injury without removal or displacement of the principal supports of the fracture, and for raising the limb from the bed, at the pleasure of the surgeon.

The splint was examined with interest by members, after which a renewal of motion to adjourn until half-past two this afternoon, was made and carried.

WEDNESDAY, June 8th, 2.30 P. M.

President: The first order of business this afternoon is continuance of discussion of the Report on Surgery.

Dr. Dodge: In my experience as a surgeon, I never have found it necessary, in order to get reasonably fair results, to go to all the trouble and nicety of carrying out Listerism in its fullness. I believe in antiseptic dressings, and in the use of different so-called antiseptics, but when we get a union by first intention, with a great deal less trouble and by more simple means, it seems to me, for the country practioner it is about as well as it would be to encumber himself with all the paraphernalia used by Lister and his followers. In abdominal surgery I

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believe it to be of greater importance than anywhere else, and I think, were I to engage in serious operations upon the abdomen or serous cavities, I would use the spray and carry out Listerism as well as I could. But, after all, the question does not really seem to be a settled one. Within the year I saw in the "American Journal of Medical Science," a long article and a very full report of cases from one of the leading surgeons of New York. The cases were taken from one of the hospitals there, and he made his comparisons with the spray and without it, after making several hundred operations, rather giving his preference to the simpler method, which is the simple cleansing of the wound after the operation, keeping it reasonably clean, and not disturbing it frequently. Within the last two months I have seen a similar article in another journal, a translation from an article by one of the leading German surgeons. While I believe the principle in the main is correct, I don't believe it really necessary to go to the vast amount of trouble that is requisite in carrying out the ideas of Listerism perfectly. It seems to me that a wound can be just as thoroughly disinfected in a few moments by thorough cleansing with a proper solution of carbolic acid, as by keeping the wound constantly under the spray. If not, wounds that occur in the streets, and remain hours before being dressed, certainly would all go to the bad. I think it is the experience of most surgeons, that even that class of wounds recover as well as any others of like gravity, even if they have been exposed to the action of the atmosphere, and what germs may be floating in it, or to the dirt and debris of the streets.

President: I see Dr. Palmer, of the Committee on Surgery; is there any word from him?

Dr. Palmer: I have no report to occupy the attention of the Society.

Dr. Senn: I would like to reply to the statements made by Dr. Dodge, in regard to the practicability of antiseptic surgery in country practice. He makes more of a raid on the use of the spray than he does on the principles of antiseptic treatment. In regard to the treatment being cumbersome, and troublesome, and time-consuming, I differ with the doctor. It is true, we have to spend more time at the first dressing. A wound that you

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may dress, perhaps, in five minutes with the ordinary slovenly method, you may consume an hour in dressing according to antiseptic principles, but it is your first and your last dressing. Instead of having that patient come every day to your office for the purpose of cleaning the wound, and syringing it with your antiseptic solution, dressing it, and undergoing a serious process of granulation and cicatrization, you have the pleasure of seeing union by first intention, as is the rule in careful antiseptic surgery; consequently the time is well spent; it is labor saved; it is time saved, in giving the patient every advantage that antiseptic surgery is able to give, and, consequently, the loss of time, and the trouble which may be incurred during the first dressing should be no plea for an abandonment of the blessings of antiseptic surgery.

On motion of Dr. Dodge, the papers presented by the Committee on Surgery were then referred to the Committee on Publication.

Dr. Robbins: I have a case to report, and as I have the subject here I would like to show it now. Permission being given, Dr. Robbins continued: This was a case of pistol-shot wound of the cranium. All that you can see left of the scar is this little blue spot here—one and one-half inches above right supra orbital foramen—which was made by the powder. On December 13th this young man was accidentally shot in the forehead with a No. 32 calibre bullet. The ball seemed to pass in almost directly backwards, perhaps a little outwards and downwards. After being conveyed to his home in a carriage he walked up stairs and went to bed. I had the wound dressed with cold water and put him on fifteen minims of ergot and fifteen grains of bromide of potassium every three hours. Later in the evening—about nine o'clock—Dr. Senn saw the case with me in consultation. He suggested that the dressing be changed to salicylicated cotton, that the medicine be continued, and that an ice-bladder be kept on the head, and this was done. I took a large-sized ivory-tipped bullet-probe and passed it in to the depth of an inch and a quarter, but could find no opening in the dura mater, and no brain tissue oozed out from the wound. The next morning the patient presented the following symptoms: There was pain in the eyes, ringing in the right ear, hyperæs-

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thesia of the left side of the neck, and an enlargement of the lymphatic glands of the neck; the right pupil was somewhat fixed. It would respond to light but in an opposite manner, that is, by shading the pupil from the light it would contract, and by exposing it to the light it would then dilate. The patient's pulse, which was 112 the previous evening, dropped to 66. His temperature was 101, and there was some vomiting. He continued to do pretty well; these symptoms passed away, and in five or six days he sat up, and at the end of the tenth day he went out doors. Two or three weeks later he came to my office and complained of having a clicking noise in his head, and said every time he blew his nose the skin would puff out over the site of the wound. This noise, heard with the stethoscope, sounded like the gentle tap of a lead pencil against a window pane. Drs. Mason, Ladd, and Marks saw him at that time. I should have stated that just after being put to bed he expectorated a great deal of blood, which came from the posterior nares. Dr. Senn suggested that the frontal sinus had been opened by fracture of bone. These symptoms finally disappeared, and he went to work about the first of March. Lately he has been laying brick and doing a hard day's work. He has very fair health. Once in a while he has headache and sometimes pain in his eye; and he says he has a little pain on both sides of his nose. The wonder is that the lodgment of the bullet in the brain has not given rise to more serious trouble.

President: We will now call for the report of the Committee on the Practice of Medicine,— Drs. Moore, Thorndyke, and Borden. Dr. Thorndyke informs me he has no report ready. I think the other gentlemen are not in the city. We will therefore pass to Obstetrics and Gynæcology; Drs. W. H. VanDusen, Wenzel, and Davies are the committee.

Dr. Wenzel: I understand that neither Drs. VanDusen or Davies are present, and before presenting what I have, I would say that I have received from Dr. Butterfield a report of a case of rupture of uterus the second time, which happened in the practice of Dr. D. W. Moore, of Waupun. I have examined it and think it should be embraced in the transactions. I present it for Dr. Moore as a voluntary paper.

Dr. Wenzel here read a paper entitled, "Is the Obstetric Binder Necessary after Labor?"

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President: The paper will now be open for discussion. We have gentlemen here from abroad; we would be happy to hear from them on any questions in which they may feel an interest.

Dr. Wenzel: I move that the paper of Dr. Moore be referred to the Committee on Publication, without reading. Carried.

Dr. Robbins: I see Dr. Jenks, Professor of Gynæcology in the Chicago Medical College. I think we would all like to hear from him on the subject of the binder.

Dr. Jenks: I came here for the purpose of listening, not expecting to take part in the discussion, consequently, I have given but little thought to the subject, although I followed the reader of the paper as closely as possible. I have only a few words to say upon the obstetric binder. I admit that what has been said concerning the dangers of the binder, is true to a great extent; and yet I use the binder, and have used it for a number of years, for reasons which I will state. Unquestionably, the binder, as it is not unfrequently put upon the abdomen, following confinement, does harm; but the reason of it is the way in which it is put on. There is not a single one here who has ever performed parecentesis abdominalis but knows what a comfort it is, and what a necessity it is to the patient that a bandage be put over the abdomen. Now a similar condition of things exists here. Here is the uterus; here is the abdominal wall. The uterus is large; the abdominal walls extended to their utmost, not unfrequently by a large quantity of amniotic fluid. A woman's condition, after the discharge of the contents of the uterus, is analogous to that of a person who has been tapped, and where a large quantity of fluid has been drawn off. Now, for a number of years, I believed that the bandage was needless, and threw it away; but one case which I call to mind, showed me the advantage of the binder. A woman had been delivered where there had been a large quantity of amniotic fluid—a woman that I had delivered before. At her previous labor I had put the binder on, and she got up without trouble. On this occasion I did not. My patient fainted; stimulants were given, the head was lowered, the feet elevated, but the patient fainted again. Every one knows that syncope in a lying-in woman is a dangerous symptom. I never like to see a lying-in woman faint; we know how dangerous it may be. This woman fainted,

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passing, the last time, into complete syncope; and I was so dull that for a long time I didn't think of the binder. After the third, and what I thought was going to be a fatal syncope, there came to my mind the necessity of the binder. I put on a binder, without giving any more stimulants, and that was the end of the syncope. That was one case. Of course, one swallow does not make a summer, nor one case establish a fact; but repeated cases, coming under my observation during a period of years, has taught me that a binder is a necessity in many cases of confinement; but it is not necessary in some cases. Now, it is all-important, if a binder is put on, that it be put on properly. To simply put on a narrow strip of muslin four or five inches wide, may do damage—may do all the damage that the doctor has stated. If the binder is put on for the purpose of preventing syncope—and that is the most important thing—and for the comfort it affords the patient, then it should be put on properly. The binder should not be one of these fancy ones, with gussets and gores, and I know not what all, that the seamstresses put on; but a simple piece of muslin, which shall extend from just beneath the mammary glands down over the hips. It is not put on for the purpose of keeping the form of the woman good, as people not unfrequently think, but simply for the support which it affords; and that is the only object and only advantage that is to be gained by the use of the binder, with the exception of one other class of cases, which very rarely occurs. We have cases where the application of the binder has a tendency to prevent pendulous abdomen. The idea entertained by some people, that the binder is used for the purpose of retaining the perfection of form, I think, is absurd, and I repeat again, that the only two things for which we apply the binder—and it is requisite in many cases—the most important are the comfort which it affords the patient, and the prevention of syncope. I have known it in a number of cases to prevent pendulous abdomen, and to be used as a prophylaxis of ventral hernia. Those, of course, are of very rare occurrence, but the cases do occur, and, consequently, it is advantageous in that limited number.

Dr. Riddell: It is rather presumptious for me to speak after Professor Jenks, but, nevertheless, my experience is in this

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manner: Where we have to deal with foreign-born physically perfect women, who have avoided corsets, and live more nearly according to natural laws, the binder, as a general thing, is not of very much use, because they are physiologically more natural in their labors, and their uteri contract naturally; their abdomens have not been relaxed by having been pushed upon with corsets very much, and we have not half the trouble with them. With Americanized women, or American women, it is necessary. Where everything is physiological in labor, we do not need the bandage so much. Where there is a large quantity of amniotic fluid, it is necessary. So far as support is concerned, it certainly is a comfort. I usually avoid all hemorrhage by giving a dose of ergot, which also prevents after-pains if you give it immediately after the expulsion of the placenta. It is better than morphia, a great deal.

Dr. Meacher: I think that the Professor's illustration of the bandage after parecentesis abdominalis, is hardly the thing. One is a physiological and the other a pathological condition, and I think they cannot be compared in that way very well. I believe that about the only effect you get on the uterus by the bandage after labor is to press it downwards in the pelvic cavity, and do mischief. So far as the prevention of hemorrhage is concerned, I do not believe it does anything at all. There are cases undoubtedly where the bandage may be useful and comfortable, but I believe they are the exceptions. I believe, as a rule, the bandage is a nuisance and ought to be discarded.

Dr. Watson, Iowa: I find myself on the unpopular side of this question, but I must admit that I am one of the old fogies who were taught to bandage. I have never allowed a patient to go without the bandage, and I never have been sharp enough to discover any evil effects from it. I was in partnership with a gentleman for fifteen years, and that was about the only point on which we differed. He said it was not the business of the physician to put on the bandage. I told him I was particular, and I never found a nurse who could put on a bandage to suit me, consequently I always put them on myself. Dr. Wenzel's proposition that they are a source of irritation is not sustained by my experience, which is, that in nineteen cases out of twenty with the bandage that I have been able to apply, the woman

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has expressed her satisfaction at the relief and comfort. The bandage I use does not vary very much from that of which Professor Jenks has spoken. I ask for the sleaziest piece of muslin they have got in the house—something that is thin and sleazy; something that will stretch; something that I cannot get very tight, although I always aim to get it on snugly. Take one of those cases where there has been a large amount of amniotic fluid, or the uterus has been very much enlarged and the labor long continued, the muscles of the uterus are perfectly exhausted, the muscles of the abdomen are exhausted and almost paralyzed, and I want to know what you have got to support that uterus in position. If the woman turns from side to side, what is there to keep that sore, tired, and inflamed uterus from giving her pain? I know of nothing but the bandage, and I know that the bandage will do a great deal towards it. In putting on a bandage I always commence at the bottom, getting it well down over the hips, and put about the second and third pin immediately over the uterus, pretty tight; as it gets up towards the mammary glands pinning it more loosely. I apply the bandage, not for the purpose of making constriction there and bringing the form to its original shape — that is a point I have no interest in particularly — but to give the muscle and abdominal tissues that have been for four or five months enlarged and stretched until the skin is often broken, opportunity to return to their original dimensions. It is very true, if the patient moves about much, upon your subsequent visits you will find your bandage has slipped up. I always replace it, and I replace it at every visit I make, and I advise patients to keep it on afterwards. Now as to the point of hemorrhage. It is true the binder does not press on all sides of the globular body of the uterus; that it cannot do; but it fixes the uterus to a certain extent in one place, and doesn't allow it to fall about as the woman moves. I have pursued the same course in regard to hemorrhage that Dr. Riddell speaks of, that is, of late years I always make it a point to give a good dose of ergot just with the last pain—I do not wait for the placenta to be delivered—and I have not in fifteen years had any trouble with placenta. I presume the majority of practitioners have met with cases where a pendulous abdomen

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has been the consequence of excessive enlargement. In such cases I have found that in subsequent labors one of the best things to aid and assist labor is a bandage. When I meet a case of that kind I put the bandage on during labor, and then the muscles of the womb can act in the axis of the pelvis and complete the labor, which without it would go on for hours.

Dr. Stansbury: I have always used the bandage and am in favor of it. In addition to what has been said, I would add this: that I have been in the habit of using a very wide bandage and bringing it well down on the thigh, and in cases where it is the first labor I have taken great pains to draw my bandage very snugly, for this reason, that there is always more or less laceration with all the care that we may take; and I have felt that I have got a better union, and that the parts healed better by keeping them in apposition. My patients always tell me they feel more comfortable after the bandage has been applied. As regards hemorrhage. My experience is that we have hemorrhage where we fail to see that the uterus is well contracted. I think we will all agree that those cases that have been taken care of by midwives are the cases where we find bad hemorrhages, and they never see that the uterus is well contracted. One of the instructions that Professor Elliot gave was, that while we looked after the child with our right hand, with our left we should see that the uterus was well contracted. If the labor has been long and exhaustive, and my patient is predisposed to hemorrhage, I have taken the precaution to give fluid extract of ergot.

Dr. Meacher: How can a bandage assist uterine contraction in cases of pendulous abdomen?

Dr. Watson, Iowa: It assists it by keeping the uterus where it belongs, and not letting it drop down over the pubis. I well remember the case of a German woman. She was walking about, and, after watching her a few minutes, by placing my hand on her abdomen I found it formed a right angle with the limbs, a perfect right angle. She had previously been confined of twins and no bandage was applied. It was a bad case of pendulous abdomen. I had her lie on her back and applied a bandage reasonably tight, which placed the uterus where it belonged, and instead of one half of the power of the uterus

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being expended in raising a part of the burden, it then acted in the axis of the pelvis, and the labor went on without trouble. Of course, I kept her on the bed after that. The principal object of the bandage is to sustain the parietes of the abdomen, and secondly, I seek to have it maintain the uterus in its position. I have never, except in some very rare cases, put on a compress, which, of course, would make direct pressure on the uterus.

Dr. Regan: There are some points which are advanced by the gentleman in his paper on which I would like to say a few words. In relation to this class of ladies which he speaks of, he says that their condition is physiological. We admit that the condition of the obstetric woman is physiological, but when it comes to a woman being confined and then getting up and sitting up in bed with a heavy uterus, that ceases to be a physiological and becomes a pathological condition. Applying the bandage may not in all cases do good, yet at the same time it holds the womb in position, and if the woman gets up in bed it keeps the womb from jerking around, and thereby producing hemorrhage. I have seen cases, and had one case, where I am very positive the binder arrested hemorrhage. I always use it in my practice, and shall continue to use it.

Dr. Jenkins: I have practiced medicine for over thirty years, or about that time, and I don't think I ever suffered a woman to go from under my hands without the binder. One great object I have had in applying the binder is to supply that support to the blood-vessels which has been suddenly taken away. The fœtus, the amniotic liquor, and the placenta, all of which have been pressing upon the walls of the blood-vessels, are suddenly taken away, and what is the consequence? The moment that woman makes any undue effort, she is very liable to faint, and fatal syncope may result. I think the office of the binder is to supply that support to the blood-vessels which has been suddenly taken away.

Dr. Jenks: May I be permitted to say a word, partly in explanation? From listening to the remarks that have been made, I think all those who have spoken in favor of the binder agree upon this one point, that the binder is not put on for the purpose of arresting hemorrhage. None of the gentlemen who have spoken of it, have spoken of it for the cure or prevention

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of hemorrhage. It seems to me some of the gentlemen do not wish to have any reference made to labor as a pathological condition. It *is* physiological, but how frequently this physiological process is changed into a pathological process, if we neglect the simplest means of preventing a pathological condition. Now, we may have this physiological condition of the uterus converted into a pathological condition, by neglecting to put on the binder, for the reasons which have been alluded to. Here is a woman who has been in labor for a length of time; perhaps the liquor amnia has been evacuated in the early part of the labor, in consequence of which the uterus has dropped down, and, coming in contact with some irregular body, like the elbows or knees, has become bruised; it is then in a somewhat pathological condition.

The last gentleman gave a very good reason for putting on the binder. It is, then, for the purpose of preventing some pathological condition that the binder is not unfrequently put on. I do not wish to be understood as advocating the binder for the arrest or prevention of hemorrhage. It is for an altogether different purpose. Not unfrequently the binder, as it is put on by midwives, and by physicians sometimes, does a great deal of harm and favors uterine hemorrhage. Suppose a little strip is pinned around the waist of a woman, as is not unfrequently done, the circulation is interfered with, and she is in a fit condition for hemorrhage to follow. The binder should not act as a girdle, but as a bandage which supports the abdomen, as we support it after parecentesis abdominalis.

Dr. Riddell: Wherever a woman is pathological, in so far as labor is concerned, I think that she needs support. Wherever the abdomen is large, or there has been some cause to weaken the muscles of the abdomen, or they will not contract to their original shape without support, they ought to have some support, and that is the only condition in which I think the binder is of any benefit, and I think the bandage is used, and ought to be used, in the majority of cases of American women, for the reason that they are not in a perfectly physiological condition. The people that live in Africa never use any bandages. They have a child to-day and go to work to-morrow. I have had cases up in the woods, where I live, amongst the half-

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breed Indians, where they would have a child and get up in ten minutes and wash it, and wash their clothes out; they never put on a bandage, and yet they keep their forms better than nine-tenths of the American women. You wouldn't know they ever had a child, so far as a pendulous abdomen is concerned. They are physically strong; they don't need any bandage. But those women that don't exercise, that are so weak they can't do a washing, and have to wear corsets to keep their abdomens from coming out too far, need bandages. Talking about washing, I never allow them to wash the baby until twelve hours after it is born. I think there are more babies die from that than from any other cause, in early life. That seems to be a rather dirty condition of things, but it is true nevertheless. I have them greased thoroughly just as quick as possible, wrap them up, put on a flannel gown, and lay them away for twelve hours. After about twelve hours you examine them and you will find that the white matter brushes all off and leaves the skin as soft as velvet. I do not allow them to be washed on account of the change of temperature from 100 degrees in the uterus to 60 or 70 degrees outside. It is often that they are taken on the knees of some superannuated old lady with spectacles on and scrubbed for about half an hour until they get blue and almost purple, and then when the child has the snuffles, the nurse will say, "Oh, I guess it nursed it from its mother."

Dr. Day: I would like to make a few remarks in favor of the bandage. I have practiced medicine thirty years, and I find in my diary over two thousand cases. I think one *fact* goes a great ways and over-balances a great many *theories*. Take a womb two inches and a half long and let it be stretched until it reaches the length of more than a foot; after long-continued traction let the womb be suddenly relieved of its contents, the walls of the abdomen collapse, and the uterus sinks down into the abdominal cavity, and we find that by applying the bandage the patient experiences a sense of relief. The binder is always a source of comfort to the patient. I find, when it is applied in a common sense way, from the mammarial glands down to the pelvis, that it will always enable the woman to change her position, to lie upon her side, and in every way conduces to her recovery.

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Dr. Butler: Professor Gilman used to say to his students: Gentlemen, such is the usual size of an unimpregnated uterus. This uterus becomes impregnated, and the contents stretch the walls of the uterus. The contents of the walls of the uterus, and the uterus itself press upon the abdominal walls, and instead of the muscles of the peritoneum running from the symphysis pubis to the attachments above in a straight line, they now pass in a sort of semi-circle. Such are the legitimate effects of an impregnated uterus. He also taught us that when the uterus became freed from its contents, those muscles were sometimes unable to contract readily, and he gave us the same reason for applying the bandage that my friend from Iowa did. You have got to supply the place of that distention, and the bandage was applied for that purpose. Professor Gilman was always in the habit of teaching us to apply it in cases where there was a relaxed condition of the uterus, where we did not feel it hard under our hand. As the gentleman says, while he was delivering with one hand he helped the uterus contract with the other. Where we did not feel that hard lump, he invariably taught us to place a compress just above the symphysis pubis. I believe the true practice in every case is to support the abdomen until the absorbents take up the fluid that has been diffused around in the adjacent tissues, and the muscles have had time to regain their tone. Such was the teaching of forty years ago, and to such teaching, gentlemen, I say "amen."

Dr. Reeve: I would like to ask Dr. Jenks if, in his judgment, the bandage has any influence upon the frequency or severity of the after-pains.

Dr. Jenks: I don't think it has.

The Board of Censors here reported, recommending for membership the following gentlemen:

William H. Searles, M. D., Wausau; graduate of Chicago Medical College, 1865.

John Geyer, M. D., Muscoda; graduate of Medical Department of Wooster University, 1876.

David H. Decker, M. D., Menomonee; graduate of Bellevue Medical College, 1867.

Levi H. Pelton, M. D., Waldo; graduate of Bellevue Medical College, 1873.

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Lewis C. Bicknell, M. D., Fort Atkinson; graduate of Rush Medical College, 1855.

George C. Stockman, M. D., Fort Atkinson; graduate of Rush Medical College, 1879.

Chas L. Stadler, M. D., Milwaukee; graduate of Rush Medical College, 1880.

John A. Ballard, M. D., La Crosse; graduate of Chicago Medical College, 1868.

Titus C. Crooker, M. D., Milwaukee; graduate of Royal College. Edinburgh and London, 1867.

The Censors present, also, as certified delegates to this meeting, from Illinois State Medical Society, Dr. Roswell Park, of Chicago; and from Northwestern Wisconsin Medical Society, Dr. S. B. Hubbell, Dr. W. Wiley.

The Censors also recommend for admission, upon examination, the following named gentlemen:

Thomas Barling, of Mindoro.
Jeremiah Sanborn, of Bay View.
J. B. Richards, of Viroqua.
J. T. Coates, of Excelsior.

Dr. Dodge: I move that the report of the Censors be adopted, with the exception of the last part, and that a separate report be made of that.

President: Then the first report would be of those who were recommended for membership on credentials?

Dr. Dodge: Yes; I move that part of the report be accepted and adopted. Carried.

President: What will you do with the balance of the report?

Dr. E. W. Bartlett: I move that the consideration of that part of the report be made the first order of business after finishing the reports of the Standing Committees. Carried.

Dr. Dorland: I move that the paper we have been discussing be referred to the Committee on Publication. Carried.

President: The next business before the Society is the report of the Committee on Pathology.

Dr. Senn: In view of the fact that many of the members leave the city to-night, I move that the election of officers be made the first order of business at the evening session. Carried.

Upon suggestion from the Secretary, the roll of membership was now called, the following members being found to be present:

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L. G. Armstrong, Boscobel.
John P. Bading, Milwaukee.
H. L. Barnes, Ripon.
J. R. Barnett, Neenah.
E. W. Bartlett, Milwaukee.
J. K. Bartlett, Milwaukee.
D. O. Bennett, Waterloo.
H. R. Bird, Mifflin.
J. L. Brenton, Beloit.
W. C. Butler, Janesville.
H. L. Butterfield, Waupun.
H. A. Chase, Viroqua.
F. H. Day, Wauwatosa.
E. F. Dodge, Fond du Lac.
B. F. Dodson, Berlin.
James Dorland, Milwaukee.
M. H. Fisk, Depere.
William Fox, Milwaukee.
John E. Garry, Stockbridge.
J. E. Gee, Brandon.
W. M. Gorham, Milwaukee.
A. H. Guernsey, Amherst.
J. C. Hall, Monroe.
Samuel Hall, Reedsburg.
Storrs Hall, Rosendale.
William Hausman, Ashford.
R. W. Hawley, Milwaukee.
Knut Hoegh, La Crosse.
E. G. Horton, Whitewater.
Geo. F. Hunt, West Bend.
G. W. Jenkins, Kilbourn City.
D. La Count, Chilton.
G. D. Ladd, Milwaukee.
Christian Linde, Oshkosh.
H. E. Lindsay, Whitewater.
E. E. Loomis, Janesville.
G. T. Loomis, Cascade.
Ira Manley, Jr., Markesan.
H. E. Mann, Marinette.
F. A. Marden, Milwaukee.
Solon Marks, Milwaukee.
Darius Mason, Milwaukee.
E. H. G. Meachem, Milwaukee.
J. G. Meachem, Jr., Racine.
Wm. Meacher, Portage.
Clark I. Miller, Whitewater.
G. E. Newell, Waterford.
Henry Palmer, Janesville.
Henry Plagemann, Woodland.
J. F. Pritchard, Manitowoc.
J. T. Reeve, Appleton.
J. N. Regan, Oconomowoc.
B. O. Reynolds, Geneva.
S. S. Riddell, Chippewa Falls.
C. W. Robbins, Milwaukee.
W. M. Rockwell, Johnston.
E. M. Rogers, Hartford.
J. A. Russell, Cedarburg.
T. P. Russell, Oshkosh.
William Schorse, Milwaukee.
Nicholas Senn, Milwaukee.
J. L. Shepard, Sheboygan Falls.
C. M. Smith, Evansville.
Emory Stansbury, Appleton.
H. Terhorst, Richfield.
Wm. Thorndyke, Milwaukee.
Harmon Van Dusen, Mineral Point.
J. H. Vivian, Mineral Point.
H. P. Wenzel, Milwaukee.
J. B. Whiting, Janesville.
W. F. Whyte, Watertown.
R. M. Wigginton, Watertown.
O. W. Wight, Milwaukee.
G. F. Witter, Grand Rapids.
H. A. Youmans, Mukwonago.
H. E. Zielly, Chilton.
A. J. Zinns, Milwaukee.

President: There being no members of the Committee on Pathology present, the Committee on New Remedies, of which J. G. Meachem, Jr., is chairman, will report.

Dr. J. G. Meachem, Jr., here read a paper on New Remedies.

Dr. Riddell: I have used the Muriate of Pilocarpin in diph-

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theria, and in one case I feel very well satisfied it produced good results. In another case, which was diphtheretic croup, I could not see the least particle of benefit from it.

Dr. Hunt: I move that Dr. Meachem's paper be referred to the Committee on Publication. Carried.

Dr. Wenzel: I have a paper in my hand, written by Dr. Wigginton, being a report of Six Cases of Sterility. I move that it be referred to the Committee on Publication, without being read. Carried.

President: The subject of Ophthalmology will be next in order. No response being heard from that committee, the next business will be the special order for this hour, the consideration of that part of the report of the Board of Censors, which recommends for admission, after examination, Thomas Barling, of Mindoro; Jeremiah Sanborn, of Bay View; J. B. Richards, of Viroqua; and J. T. Coates, of Excelsior.

A Member: I would inquire whether those gentlemen are graduates of a college. If not, what reasons do the Board of Censors give for their recommendation?

Dr. J. K. Bartlett: They made application for admission by examination. The Board of Censors commenced on Monday, at two o'clock, and worked all through yesterday, examining these gentlemen. The Board of Censors were satisfied to recommend them for membership. These are all the reasons I can give. Your Board of Censors are appointed by you for this purpose. Their recommendation is never given without thorough consideration and deliberation. I would like to interrupt the proceedings again to make a report. The Board of Censors recommend for admission:

James H. McBride, M. D., of the Milwaukee County Insane Asylum; graduate of Bellevue Medical College, 1873.

Charles C. Rogers, M. D., of La Crosse; graduate of Bellevue Medical College, 1880.

Dr. Meachem, Jr.: I would like to ask if there are any members of this Society who have been admitted to practice by the Society, or if the State Society has issued licenses to practice?

Dr. Reeve: In the early days of the Society there were a few licensed by the Society. Since the re-organization of the

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Society, in 1877, there have been some admitted to the Society, who occupy the same position that these gentlemen do; that is, they were admitted upon examination, without reference to the question of whether they were graduates or not.

Dr. Meachem, Jr.: Doesn't that practically give them the rights of a diploma?

Dr. Reeve: It gives them all the rights to practice that any practitioner has, I suppose, in the State.

Dr. Meachem, Jr.: It seems to me, that while the examination given by the Board of Censors is all right, and, perhaps, sufficient, yet it would be better not to establish a precedent of this kind, but rather that men should obtain diplomas from the regular schools, and that this Society should admit graduates of schools only. It seems to me it would not do to establish that precedent at this time, when there is an effort made on our part to establish better qualifications and advantages.

Dr. Senn: It is the duty of the Board of Censors to examine applicants who come before them, and, if they pass a satisfactory examination, to recommend their admission. If you desire to have any change of this duty, the organic law must be changed. As long as the law stands as it is now, these men have a perfect right to come and pass an examination, and be admitted upon the recommendation of the Board.

Dr. Riddell: I wish to state one side of this question that has not been brought forward—not having any reference to the gentlemen who have been recommended, because I do not know them—but merely as a matter of principle. It certainly would be a great deal cheaper manner of getting a certificate or diploma to practice medicine in this State, to pass an examination before the Board of Censors, than it would be to go to college for two or three years and study the profession. To admit them would be establishing a precedent which would allow the younger men, and some of the older ones too, who wish to escape any medical law we may have, an opportunity of coming here and getting a diploma to practice in this State, for a small sum.

Dr. Senn: Although the organic law of the Society does state they have a right to come before the Board of Censors, it does not state that we have to admit them. They are only admitted upon the votes of the members of this Society, and if

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they choose not to admit them they can do so. Even a physician with a diploma need not be admitted if the members don't choose to let him in. I merely mention that, so as not to establish a precedent which may be hereafter abused.

Dr. Dodge: In order to settle this matter, I move that the recommendation of the Board of Censors be adopted, and that the Society vote on the question by ballot.

A Member: I would like to have it distinctly understood by the Society, whether these gentlemen are graduates or not, before a vote is taken.

President: I understand they are not.

Dr. Robbins: I would amend Dr. Dodge's motion, by moving that the whole matter be laid on the table for a year.

Dr. Meachem, Jr.: I am in favor of having the matter settled now.

Secretary: The Censors having recommended these gentlemen, it seems to me that we should not go back of their recommendation without very good reason. Two of these gentlemen are elderly men, who have lived in their respective communities many years, and have won the confidence of the people as being respectable practitioners of medicine, and having been recommended for membership by the Censors, I see no reason why they should be rejected. There was a law passed last year which practically prohibits any man from practicing medicine unless he has a diploma or is a member of some State or County Medical Society. It is an entering wedge, I hope, to a better law in the future. I would like to maintain and exalt the standard of this and every medical society as high as possible, but it is a question whether it can be done by rejecting men like these. All the laws that have been passed in all the states, make exception in favor of the very class who are recommended by the Board of Censors on this occasion. I therefore abide by the report of the Censors, believing that they have examined these men thoroughly and had good reasons for recommending them to membership in this Society.

Dr. Hunt: I hope that the motion to lay on the table will not prevail, for I know that there have been several members admitted to this Society upon examination since 1869. These men have come before the Censors and have been examined,

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and I have no doubt that they are qualified to practice medicine. I think we will be taking a step forward, and not backward, by allowing these men to become members of our Society.

Dr. VanDusen: I do not know how these men can be kept out of this Society. I think they would have a right, providing we should say that they should not become members of this Society, to commence suit against us for admission. I am therefore decidedly in favor of adopting the report of the Board of Censors.

Dr. Wight: If my friend, Dr. Reeve, will permit me, I will correct one point in his remarks. He stated that the law passed last winter, prohibited any man from practicing in this state unless a graduate of some medical college or a member of some legally constituted medical society in this state. The law prohibits no man from practicing medicine in this state. It simply prohibits any man from using the title of doctor, surgeon, or using any letters or words in the English, or in any other language, on a sign, or in an advertisement, or in any transparency, or in any way announcing himself to the public as a physician, unless he has a diploma or belongs to a legally constituted medical society. Mr. John Smith can put up his name over his door as John Smith, so that people who may know that John Smith undertakes to mend broken limbs, or undertakes to administer medicine, may find where John Smith lives, but unless he has his diploma, or belongs to a medical association legally constituted in this state, he cannot announce himself to the public as a doctor. That is all there is of that law. It is a small gain, but it is something.

I think it behooves us, as representing the State Medical Society of Wisconsin, of long standing, and legally constituted, to be liberal; and we should pay some respect to our brethren who constitute the Board of Censors, who have examined these applicants for membership with us. These men are all known to us; they are all old members of this Society, and members in high standing; men of good sound judgment and practical sense, who have a heartfelt interest in this Society, and know what its needs are, and what it should do. These gentlemen who have no diplomas have presented themselves here, and have

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passed an examination before the Censors, and they have been recommended to us for membership. I think we should accept the Censors' judgment in that matter. They have examined these gentlemen as to their knowledge of medicine, and as to their standing, etc., where they live, and are qualified to give us a recommendation from that knowledge.

I do not quite agree with my friend Dr. Van Dusen—and may the Lord spare him to be a friend to others, if he is not a friend to me, many a day yet; and right glad am I to see his countenance so light and cheery, and full of encouragement and wisdom [Applause.]—I do not quite agree with him that we are bound to make members of this Society anybody that the Censors recommend, because, as I understand the organic law, it requires a certain percentage of votes to make them members; but I do agree with him on this point, that if we should refuse them membership in this Society upon the ground that they come here without a diploma from a college, and on that ground alone, then we should be violating the fundamental law of our organization; we should be liable to suits at law for it as a Society; we should be served with writs from the courts that would make us reconsider such action; and, in addition to that, it would be illiberal on the part of this Society. If, as I heard it announced, one of sixty years of age, who has been practicing a long time in a community in this State, should be rejected by us simply because he has no diploma, while we accept some young snip just from some medical college, simply because he *has* a diploma, then we should be committing ourselves, as an organization, to an illiberal course. Our medical colleges in this country are not of such high standing that we need to pay such profound respect to them. Many of them are mere doctor-factories. Their prosperity consists in getting all the students possible, and some of them are getting a great number of students because they graduate easily almost everybody that comes. We are not bound in our wish to maintain the standard of the medical profession to pay such profound respect to a diploma, simply because it is given by a medical college, and no respect to the judgment of our Censors who have examined these seasoned old men and found them to be useful and intelligent practitioners in their communities. For this reason, and

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for many other reasons which I might state, but with which I do not wish to take up your time, I implore my brethren here, as a matter of public policy, as a matter of devotion to the general aims and objects of our Society, to pursue a liberal, instead of a narrow and illiberal, course.

Dr. Robbins: I withdraw my motion.

A vote was then taken upon the admission of these gentlemen, the chair appointing Drs. Wight and Marks to assist the Secretary in making the canvass. It was announced that there were 45 votes cast, of which 34 were "yea," and 11 "nay."

The chair then announced that they were thereupon admitted members.

The report of the Board of Censors, recommending Drs. McBride and Rogers to membership, was then adopted.

Secretary: Last year Dr. Wilbur, one of the oldest members of the Society, was made an honorary member, but by inadvertence his dues were not remitted, and I move now that they be remitted; and further, that a vote of thanks be extended to him for his gift to the Society of a copy of the proceedings of the Wisconsin State Medical Society of 1855. I think there are only two or three of these copies in existence. The Society did not own one until very recently. Carried.

Secretary: Dr. H. D. Adams, of Beloit, a retired practitioner, desires to retire from membership with this Society. I know of no reason why his request should not be granted. Unless some one does know of a reason, I move that his request be granted. Carried.

Secretary: I move that Dr. J. K. Bartlett be appointed a committee to prepare an obituary sketch of the late Dr. E. B. Wolcott for publication in the next volume of the Transactions. Carried.

Secretary: During the many years I have served as Secretary, I have accumulated quite a number of reports of medical societies of other states. As there is no permanent library or place for keeping them, it seems to me that it might be well for the Society to turn them over to some organization where they will be permanently kept, and in behalf of the State Board of Health, I would be glad to have them placed there, and I move that they be disposed of in that way. Carried.

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Dr. Van Dusen: Within the last year there has been two deaths among the members of this Society—Dr. Thomas, of Darlington, Lafayette County, and Dr. Geo. W. Burrall. The former was a student in my office for a year, and was not only a practitioner who was an honor to this Society, but was held in great respect in the neighborhood where he practiced for twenty years. The latter was a neighbor of mine for over thirty years, and I thus had an opportunity to know his worth. I now suggest the propriety of some one being appointed to prepare their obituary sketches.

Secretary: I move that Dr. Van Dusen be appointed a committee to prepare such sketches. Carried.

Secretary: I have an obituary sketch of Dr. Myers, a member of this Society, prepared by Dr. N. M. Dodson; also an obituary sketch of Dr. Dubois, prepared by Dr. Willard, who is not a member of this Society, but was an intimate friend of the deceased; also an obituary sketch of Dr. Wm. McCall, of Monroe, by Dr. Cook. I move the acceptance of these sketches, and that they be referred to the Committee on Publication. Carried.

Secretary: Dr. F. H. Linde, of Oshkosh, has died since our last meeting. I move that Dr. Barnett be appointed a committee to prepare a suitable obituary notice for the next volume of Transactions. Carried.

Secretary: The following resolution has been placed in my hands:

Resolved, That this Society dispense with the future reading of essays until after all discussion called for by any member of this Society shall be disposed of; Second, That any member of this Society, having any special subject which he would like to discuss before this Society, shall notify the Secretary of said subject at as early a time as practicable, and that it be incumbent upon the Secretary to issue a circular to the several members of this Society, stating the several subjects which will be presented for discussion, at least sixty days before our annual meeting.

Dr. Riddell: I think that would be opening an extensive field for discussion. There might be as many subjects as there are members. I think the better plan would be for the Society to decide on certain topics for discussion at the next meeting, and in that way confine it to some particular subjects.

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Dr. Reynolds: I would like to have the mover state what the object of this resolution is. I don't understand the scope of it; is it to cut off all discussion except such as the Secretary may announce? It seems to me that in the discussions which arise from the reading of a paper is the gist of the instruction we get. Now, the paper on the use of the bandage brought out more discussion and elucidation than anything else. This resolution, if I understand it, will revolutionize our whole method here—whether we shall discuss the papers when we are hot or put them off till we are cool. I think they should be discussed as we go along. I presume the object is to gain more time, but let us hear from the mover of the resolution as to what his object is.

Dr. Butler: I drew the resolution. We number about two hundred in this Society. We meet here for the improvement of each individual. We can read our essays in our offices and get the information contained in them there. But the object of the resolution is this, that we adopt the course that they are adopting in the east with regard to discussing subjects, after seeing pathological specimens, that they want light upon. We have listened to essays here to-day which can be read in the reports, and at our next meeting some member may require light upon some particular point contained in them. Let him express that idea to the Secretary, and before the meeting is called, let the Secretary issue a circular that such a point will be called up by so and so for discussion.

The gentleman well knows that a year ago the subject of diphtheria came up and was discussed at length; and Dr. Van Dusen, calling for a short-hand writer, said: "What we want is our discussions: the essays we can read." A doctor here to-day suggested the same idea when he said: "I approached the sick-bed of a person with puerperal fever with fear and trembling, until the discussions in this Society brought up certain things that led me out of it." Now the only question in this matter is: which is for our greatest good, to discuss the points at once, or to look them over carefully and see what we want to know about them? I, for one, want to see all the bearings of a thing. In conversation to-day with our worthy President, I told him I didn't believe his essay could be discussed intelligently to-day,

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nor to-morrow. These things have to be looked over and thought over, and when they are discussed, they are discussed for the good of those who need information. That is the object of the resolution. If the subject for discussion is exhausted in an hour, then read as many essays as you please, but let us have the discussion first.

Dr. Riddell: The doctor and myself are of the same opinion, only I believe that we ought to prepare our subjects for discussion now, and so prevent too many subjects being brought up. If we appoint our subjects now, then next year we shall be prepared to discuss them intelligently, and give such experience as we may have, and in that way we shall gain the experience of others.

Dr. Senn: I move that we adjourn till seven o'clock this evening. Carried.

EVENING SESSION, June 8, 7.00 P. M.

President: The resolution of Dr. Butler was not passed upon before adjournment. What action will you take upon it? If it passes it will work a revolution with us.

Dr. Day: As it will make a revolution in our proceedings, I move, with all due respect to Dr. Butler, that it be indefinitely postponed.

Seconded by Dr. Senn.

President: The question is upon the indefinite postponement of the resolution.

Motion lost.

Dr. J. K. Bartlett: I move that we proceed to the business set apart for this hour.

President: The election of officers is now in order. I will appoint Drs. Gee and Loomis as tellers.

The Society then proceeded to ballot for officers, resulting in the election of the following named gentlemen:

President—Dr. William Meacher, of Portage.
First Vice-President—Dr. F. H. Day, of Wauwatosa.
Second Vice-President—Dr. C. Linde, of Oshkosh.
Secretary and Treasurer—Dr. J. T. Reeve, of Appleton.

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President: I will appoint Drs. Marks, Senn, and Dodge, of Fond du Lac, as Committee on Finance.

On motion of Dr. J. K. Bartlett, the Society then adjourned until morning at the regular hour.*

THURSDAY MORNING, June 9, 9.00 A. M.

Meeting called to order by the President.

Dr. Wenzel moved that Dr. Wigginton being present, he be invited to read the paper on Sterility which was referred to the Committee on Publication. Carried, and paper read.

On motion of the Secretary, paper was again referred to Committee on Publication.

Dr. Butler: Our Board of Censors yesterday reported some men for admission as members. Now, we have either got to meet these men as *Mr.* John Doe or *Dr.* John Doe. Out of respect to our Board of Censors, and out of respect to those who have come here and undergone an examination, if there is a link loose, if we lack any power to make those gentlemen doctors, and take them by the hand and call them physicians, let us take the proper steps to secure that right.

President: This inquiry of Dr. Butler's is pertinent. It is stated in one of the city papers this morning that these men are now doctors without diplomas, or something equivalent to that. Now, is the certificate issued here equivalent to a diploma? What position are these men in after coming here and being examined, and receiving our certificate of membership?

Dr. Mann: I do not think, Mr. President, there can be any question about their position, after being admitted to this Society, under the law. The present law in this state is very explicit on that point; that a membership in the State Society, or any County Medical Society makes them legally qualified to practice, and they can testify in court the same as others, and have the same status, rights, and privileges. It makes them doctors.

* After the adjournment of the Society this evening, the members generally repaired to Schlitz Park in accordance with the invitation of the Committee of Arrangements, where a pleasant hour was spent in social intercourse, and in enjoyment of a concert by Bach's grand orchestra.—Secretary.

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Dr. Van Dusen: My view is, that they are licentiates; not that they are entitled to have M. D. conferred upon them, but that they are licentiates of the State Medical Society. The Secretary, by giving them the certificate, grants them license to practice medicine with every privilege that an M. D. has.

Dr. Hall: As I understand the law, it is that the State Medical Society has a right to grant them diplomas, not as M. D., but as Dr. Van Dusen has said, as licentiates.

Dr. Mann: I think any lawyer will say that members of this Society are legally entitled to the title of M. D., or Doctor. I have a copy of the law which was passed by the legislature last winter, which I will read:

CHAPTER 256.

AN ACT to prevent quacks from deceiving the people by assuming a professional title.

The people of the State of Wisconsin, represented in senate and assembly, do enact as follows:

SECTION 1. No person practicing physic or surgery, or both, who is prohibited by section one thousand four hundred and thirty-six of the revised statutes of Wisconsin, 1878, from testifying in a professional capacity, as a physician or surgeon, in any case, shall assume the title of doctor, physician, or surgeon, by means of any abbreviation, or by the use of any word or words, letters of the alphabet of the English or any other language, or any device of whatsoever kind, printed, written, or painted, or exhibited in any advertisement, circular, handbill, letter, or other instrument, nor on any card, sign, door, or place whatsoever. Any person violating any provision of this act shall be deemed guilty of a misdemeanor, and shall, on conviction thereof, be punished by a fine of not less than twenty-five dollars, nor more than one hundred dollars, or by imprisonment in the county jail not less than ten days nor more than sixty days for each offense.

SEC. 2. Upon complaint made, in writing, under oath, before any magistrate or justice of the peace, charging the commission of an offense against the provisions of this act in his county, it shall be the duty of the district attorney to prosecute the offender, and in all such prosecutions the burden of proof shall be upon the defendant to establish his right to use such title, under the provisions of this act.

SEC. 3. Any person prohibited by section one of this act from assuming the title of doctor, physician, or surgeon, who shall practice, or pretend to practice, physic or surgery, or both, shall not be exempted from any, but shall be liable to all of the legal penalties and liabilities for malpractice; and ignorance shall be no excuse for failing to perform,

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or for negligently or unskillfully performing, or attempting to perform, any of the duties required by law, of practicing physicians or surgeons.

SEC. 4. Every person pretending to practice physic, or surgery, or both, shall upon demand of any person exhibit all diplomas or licenses that he may have, to practice physic, or surgery, or both, and if such person upon demand shall refuse to exhibit such diplomas or licenses, any suit instigated against him under this chapter shall not be considered malicious.

SEC. 5. This act shall take effect from and after its passage and publication.

Approved March 30, 1881.

Section 1436, of the Revised Statutes of Wisconsin, referred to in the above law, reads as follows:

SEC. 1436. No person practicing physic, or surgery, or both, shall have the right to collect in any action in any court, fees or compensation for the performance of any medical or surgical service, or to testify in a professional capacity as a physician or surgeon in any case, unless he shall have received a diploma from some incorporated medical society or college, or shall be a member of the state or some county medical society legally organized in this state.

Dr. E. W. Bartlett: The law distinguishes at least three classes of persons who are entitled to practice medicine in the State of Wisconsin, and give testimony in courts: First, those who have received a diploma from a medical college; Second, persons who have simply certificates of membership from this Society without any diploma at all; we admit them here simply as members, not as M. D.'s; a certificate of membership from this Society does not entitle them to be called Doctors of Medicine, or to take that title; a third class arises from the giving of certificates of membership from a county society. If any county society, formed under the law, admits a gentleman, and gives him a certificate of membership, he has all the rights and privileges that others have in the State of Wisconsin.

I would like to ask the Secretary whether it is not a fact that there are two kinds of documents that may be issued by this Society, and whether the Society does not have the power to give a legal diploma, reading like a diploma from a medical college, giving the candidate the degree of Doctor of Medicine? In regard to Dr. Mann's suggestion, that all members admitted

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here can be called doctors, I suppose that is so, but not M. D. A certificate of membership in this Society entitles a man to be called a doctor, but not to attach to his name M. D.

Secretary: For the last twelve or fifteen years certainly, only one form of certificate has been given, which each member receives, to the effect "that having exhibited unto the Censors of the Society satisfactory evidence that he is a physician duly qualified in the manner prescribed by law, was elected by and became a member of this Society." It does not state he is an M. D.; the Society has never granted the degree of M. D. The admission of members yesterday who have no diplomas is nothing new in the history of this Society, or different from what it has done on different occasions; I don't know in how many instances, but several. Under the law, members thus admitted have the same status as the man who has a diploma from a medical school.*

Dr. Van Dusen: If these men are satisfied with a simple Certificate of Membership, it is all right; but if they demand a diploma I think they are entitled to it.

Dr. Vivian: On this question of diplomas and licenses, it seems to me, it is a distinction almost without a difference. Our state law, under which this and the county medical societies exist, gives to this Society, and to the county medical societies, power to issue diplomas. That is the organic law under which

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*As a matter of history, it may be here stated that, while the statutes of the State give to this Society the power to grant a "diploma," and while the form of a diploma was adopted by it in the year 1856, the Society has never availed itself of this power, or granted a diploma, except in one instance, when, in 1858, it did grant a "diploma" to Coryden S. Farr, of Prairie du Sac. The form of this "diploma" was as follows:

To all unto whom these presents shall come, or may in any wise concern, the President and members of the Wisconsin State Medical Society send Greeting:

WHEREAS, ... has exhibited unto the Censors of this Society, satisfactory evidence that he had studied the Medical and Physical Sciences for the term and in the manner prescribed by law, and that he is now qualified to practice the Healing Art with credit to himself and benefit to community;

Therefore, know ye, that by virtue of the power in us vested by the laws of the State of Wisconsin, we do hereby grant unto the said ..... this diploma, together with all the rights, immunities, and privileges appertaining to the same.

[L. S.] In testimony whereof our President has hereunto subscribed his name and caused the seal of the Society to be affixed.

Done at .... this ..... day of .... A. D. 18....

Attest,

....Secretary. ....President.

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this and county medical societies exist, and I question whether the statement of my friend, Dr. VanDusen, is not correct, that these persons who are admitted here have not the right to demand from this Society diplomas which shall be recognized as diplomas, if our Certificates of Membership do not carry with them the power and dignity of diplomas.

The Secretary read section 1425 of the Revised Statutes, which is as follows:

SECTION 1425. The Censors of each Medical Society shall carefully and impartially examine all medical students who shall present themselves as candidates for a diploma and membership of such Society, and report their opinion in writing to the President; and thereupon the Society may grant diplomas to the persons so examined, under the hand of the President and seal of the Society, which diploma shall constitute them members of such Society; but no person shall be so examined, and no diploma shall be issued to any person, unless he shall have arrived at the age of twenty-one years, have a good English education, have studied medicine at least three years with some respectable practitioner, and shall produce satisfactory evidence of good moral character. Every person receiving a diploma from any such Medical Society shall pay therefor ten dollars to the Treasurer thereof.

Dr. E. W. Bartlett: I offer the following resolution, so that the Society may make some expression in regard to this matter:

Resolved, That it is the sense of this Society, that no person should be admitted to the Society except they have a diploma from some medical school.

I do not offer this as an amendment to the Constitution, which would be, perhaps, the proper way, but that the matter may be canvassed now, as to whether, in the minds of the majority of the Society, it is best hereafter to admit any person to membership in this Society under any circumstances, except by diploma.

Dr. Barnett: I am opposed to the resolution just offered by Dr. Bartlett, because it has been the practice of this Society in the past to admit those who have not received their degree of M. D. from a medical college; and I would be opposed to this Society assuming any right that it did not hold under existing laws. Now, under the act read by Dr. Reeve, it seems to me, there is no power there given this Society to confer the degree of M. D., or any other degree, upon any person. The right to confer

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any degree on any man is something that is given by the legislature of the State, and it is given to some institutions of learning as a general thing, but never, so far as I have heard, to a medical society or any other learned society.

Dr. Vivian: I think that if we were to pass this resolution we should commit a breach of the organic law under which this Society exists. The law expressly states that it is the duty of the Censors to examine persons presenting themselves for admission, and it does not allow them, as I understand it, to be excluded simply because they have not a diploma from some college; but it is the duty of the Censors to inquire into their qualifications. Now, we might set the standard of qualifications as high as we please, but if we assume to say that no man shall be a member of this Society unless he has received a diploma from some medical college, we are breaking the spirit if not the letter, and, I think, the letter of the organic law under which the Society exists.

Dr. Dorland: I am very much in favor of the gentleman's resolution. I think with Dr. Bartlett that it would be a great point gained to stop the admission of parties who are not graduates of regular medical colleges.

Dr. Mann: In relation to this question, I would like to say that I do not think this Society ought to throw away this privilege and responsibility which the law has placed upon it. It is a notorious fact that many of our medical colleges grant diplomas to unqualified practitioners; and there is an effort being made now, all over the country, to raise the standard of medical education. Another thing; nearly all our medical colleges have a personal pecuniary interest in the granting of diplomas, which we have not. Another thing; we have a membership in this Society which any medical college or any society in this Union might be proud of, and are abundantly qualified to pass upon the qualifications of practitioners; and, I think, if men apply here, we ought to pass upon them, and decide, one way or the other, whether they are qualified or not. I think we have a right to do it, and I think we should exercise that right; and if we have not a Board of Censors in whom we have confidence, let us elect a Board of Censors that the Society has confidence in. Those are my views on the matter. I believe we should be

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throwing away, by passing this resolution, a privilege which we have no right to cast aside. I do not believe we should admit every man that offers himself here—I should be opposed to that—but every man that is qualified; and I would be perfectly willing to see it go further, and have the Board of Censors examine every applicant for membership. I think that would be a good idea.

Dr. Bartlett: I will withdraw the resolution. All I desired was to bring this matter up.

A motion that Dr. Bartlett be allowed to withdraw his resolution was lost, and, upon motion, the further consideration of the resolution was postponed to eleven o'clock.

Secretary: I have a communication from Dr. Godfrey, formerly of Benton; he has removed to Galena, Illinois, and presents his resignation as a member of the Society. I move that his resignation be accepted. Carried.

Dr. Reeve: I present my report as Treasurer of this Society. It has been referred to the Finance Committee, and is endorsed by it.

J. T. REEVE, *as Treasurer, in account with State Medical Society:*

DR.

To balance on hand at date of last report,		$ 44 54
" Admission fees received,		60 00
" Annual dues received at meeting of 1880,		226 00
" Annual dues since received,		238 00
		$568 54

CR.

By Amount paid Stenographer,	$ 39 55	
" Amount paid Janitor,	5 00	
" Amount paid for Postage and Telegraphing,	42 84	
" Amount paid for printing Transactions,	246 91	
" Amount paid for printing other matter,	14 50	
" Transportation,	1 86	
" Paid Secretary,	100 00	
" Balance on hand,	117 88	
		$568 54

On motion of Dr. Dorland, the report was accepted and adopted.

Secretary: I have a communication in the nature of a

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charge preferred by one member of the Society against another. I move its reference to the Committee on Ethics. Carried.

On motion of the Secretary, the Society then proceeded to the election of a Censor in place of Dr. N. M. Dodson, whose term expires at this meeting, which election resulted in the choice of Dr. D. Mason.

Dr. J. G. Meachem, of Racine, then read a paper upon Diphtheria and Erysipelas.

Dr. Vivian: I am very glad we have heard this paper, for my experience during last winter has been identical with that of Dr. Meachem, that Diphtheria and Erysipelas have been almost interchangeable maladies. The Diphtheria has seemed to extend up the nasal, and out through the lachrymal passages, and attack the face, and these exudations of the throat pass off. I could name case after case in which the same series of symptoms existed as with Dr. Meachem, and, with him, it is the first time my attention has been called to the interchangeable character of these two maladies.

The paper was, on motion, referred to the Committee on Publication.

The Censors here made report, recommending for admission:

Louis F. Frank, M. D., Milwaukee; graduate of the Medical Department University of New York, 1878.

On motion, the report was adopted.

Dr. Robbins exhibited for Dr. Marden, a member of the Committee on Pathology, some interesting pathological specimens, the first of which was an enlarged heart with calcareous deposit on the valves of the aorta; the second specimen was a portion of the transverse colon, removed from a man who for several years had suffered from constipation. The colon was greatly contracted, very nearly closed; in fact, being hardly large enough to allow an ordinary match to be passed through it. The third specimen was of a rodent ulcer. The patient from whom it was removed was a man aged sixty. The ulcer, which was of two years' standing, had entirely destroyed the right half of the inferior maxillary, and had invaded the tongue to a great extent. On his admission to the hospital the gaping wound was packed with absorbent cotton, saturated with a solution composed of Sulph. Zinci, Sulph. Cupri, Zinci Oxyd., and

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Aqua Calcis. Six weeks thereafter the diseased mass was removed, and examination by the microscope showed that the cells resembled those of Epithelioma in all respects but that of size, being much smaller than the cells usually observed in that form of disease. The only history of the case that we could obtain was that about two years before he had observed a small sore just below the lip; it remained stationary for some two months, and then spread rapidly. The patient survived the operation but a few hours. A photograph accompanied report.

The Society then proceeded, on motion of Dr. J. K. Bartlett, to vote for the next place of meeting. Madison and Mineral Point being each placed in nomination, the former was chosen, but at the request of Dr. Van Dusen, who presented some reasons why it seemed specially desirable that the Society should meet in the southwestern part of the State, the vote was reconsidered, and Mineral Point was then chosen.

Dr. J. K. Bartlett: I now move that Dr. H. Van Dusen, Dr. Vivian, and Dr. Eastman be appointed a Committee of Arrangements for our next meeting. Carried.

Dr. Reeve: I move that authority be conferred upon the President and Secretary to grant certificates as delegates to any members that may desire to attend the societies of other states. Carried.

President: The hour has now arrived for the discussion of Dr. Bartlett's resolution.

The Secretary read the resolution.

Dr. Stansbury: I think Dr. Bartlett uttered a great many truths in his speech. We are all aware that the State Medical Society of Wisconsin is not appreciated as it should be by the profession at large. This is manifest from the fact that there are but a comparatively small number of the members that are here regularly every year. There are a great many like myself who drop in once in two or three years. We have not the Society at heart as much as we ought to have, and many members of our profession, in high standing in the State, have never connected themselves with us. Now, I believe that we ought to raise the standard so that we would, each and all of us, feel proud that we were members of the State Medical Society of Wisconsin.

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Dr. Witter: I am pleased that this resolution is presented. It has been discussed, and various views have been given, but it seems to me that the practice of the last fifteen years, honored by some of the best members of the Society, shows us that we must have some confidence, at least, in the Board of Censors, who have this matter in charge. Now, a review of our past action shows that while there may have been now and then an isolated case of a person coming into this Society who has reflected no great credit on it, yet the masses are all right. It is also true that now and then an M. D. has brought some odium upon the Society, so that we cannot exempt ourselves entirely, if we would, from all the objections that can be raised. The question then comes to us whether or not, we, as a Society, have confidence in the Board of Censors, that we ourselves appoint. It is significant if we have not, and if we have, it seems that they can control this matter, and that the law, as it has been and now is administered, is all right.

Dr. Fox: It seems to me we are wasting a great deal of time in discussing this resolution. The report of the Board of Censors can be accepted or rejected, as we see fit. We are working according to law and according to the Constitution of the Society. The Board of Censors can form their report, and we can reject or accept it, as we choose.

Dr. Meachem: I move that this resolution be laid upon the table. Carried.

Dr. E. W. Bartlett: I move that the Secretary be requested, when he makes the next list of the members of this Society, to indicate after their names their titles, whether A. B., A. M., or M. D., the college from which they graduated, and the date of their graduation; also, to mention those that have been admitted to this Society by examination, so that we may have some statistics and know what members have been admitted as M. D's., and what by examination.

Dr. Meachem, Sr.: I don't know what we have got to do with the A. M's. and A. B's. The M. D's. are all right.

Dr. E. W. Bartlett: I withdraw that part, I don't know as it is essential.

Dr. J. K. Bartlett: I do not think it is proper to make any distinction between those who have graduated and those who

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have not graduated. Under our organic law they have a right to come and ask for examination, and we have a right to receive them or not, but if we do receive them, I don't think we ought to make the invidious distinction, of which this is but the equivalent.

Dr. Dorland: I would like to have the doctor add to what he has already said, that the date of their admission into the Society shall be printed after the name.

Dr. E. W. Bartlett: I will do that if you desire.

Motion carried.

Dr. Wight: I move that the Board of Censors of this Society be instructed to examine all applicants for membership, whether they have diplomas or not, in order to ascertain whether they are qualified to practice medicine and be members of this Society.

Dr. J. K. Bartlett: Our law is specific. We cannot go against the statute law, which prescribes that members may be admitted here by diplomas, and says nothing at all about an examination.

Dr. Wight: I didn't quite understand Dr. Bartlett's remarks.

Dr. J. K. Bartlett: It was this, sir; that our organic law, the statute law and constitution, requires that we should receive a diploma as evidence, and should admit to membership the applicant having such diploma, having at the same time the evidence of two respectable practitioners as to the moral character of the physician. The Censors are required to receive that as evidence sufficient for admission without examination. When a person comes without a diploma, we are then obliged to examine.

Dr. Wight: I should like to enquire whether this Society has any power to go behind what appears to be a diploma or not, in admitting applicants to membership, or whether a diploma which seems regular on its face must be admitted as *prima facie* evidence of the qualifications necessary to become a member of this Society without inquiring into it.

Dr. J. K. Bartlett: It has always been the practice of the Board of Censors to examine diplomas very carefully, and they have refused diplomas again and again. No diploma from any disreputable school has been received, to my knowledge, as

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evidence of qualification for admission here, and I do not think there is any chance for it. We know all the reputable schools in the country.

The motion was then put and was lost.

President: There is a resolution, introduced by Dr. Butler which has not been disposed of.

The resolution was read, as follows:

Resolved, That this Society dispense with the future reading of essays until after the discussions called for by any member of this Society shall be disposed of; that any member having any special subject which he would like to discuss before this Society, shall notify the Secretary of said subject at as early a time as practicable; and that it be incumbent upon said Secretary to issue a circular to each member of this Society, stating the several subjects which will be presented for discussion, at least sixty days before our annual meeting.

Whereupon, on motion of Dr. Bading, it was laid on the table.

Dr. Mann: I would like to move a reconsideration of the resolution passed a short time since, in relation to the attaching of the titles, in the report of the Secretary, to the names of the members of the Society. I have considered the matter since, and I regret that I voted in the affirmative. I believe that every man that is admitted into this Society stands before the law on an equality, and we ought to have but one class of members, and all ought to be on the same footing.

Dr. Wight: I think we are laboring under some misapprehension in this matter. The gentleman who moved a reconsideration, if I understand the situation right, has one thing in mind, and the resolution of Dr. Bartlett states another thing. I hardly agree with what I think the gentleman who moved the reconsideration has in mind, although I am not in favor of the resolution of Dr. Bartlett. I would ask the Secretary to read the resolution of Dr. Bartlett.

The Secretary then read the resolution, as follows:

Resolved, That the Secretary be instructed to insert in the next list of members, after the names of members who have been admitted on diplomas from medical schools, the title M. D., also the school where they graduated, the date of their graduation, the date of admission into this Society, and also state what members were admitted into this Society on examination.

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Dr. Meachem: I should be sorry to see that reconsidered. A gentleman who has gone through the regular course and received the degree is certainly entitled to it, and should be known here and outside from the man who has not got it.

Dr. Wight: I wish to bring the matter to a focus by asking Dr. Mann to withdraw his motion to reconsider this resolution, and make a new motion, embracing what I think is exactly his idea, that a distinction should be made in our report between those who are M. D.'s and those who are admitted on examination and are not M. D.'s.

Dr. Mann: That is the resolution as it stands now.

Dr. Wight: The resolution as it stands now requires that the Secretary should mention, in connection with each name, the time of graduation, the college from which the man graduated, etc. If I understand the gentleman's idea, he simply wishes to make a distinction in our printed roll between members of this Society who are regular M. D.'s and those who are not, and not go into the details embraced in Dr. Bartlett's resolution.

Dr. Mann: If we do not want to recognize a man as a physician, as the law does, after he is admitted here, we ought not to admit him at all. After he is admitted I claim that he is just exactly the same as we are before the law. He has a right to write M. D. after his name, and no power in this Society, or any society, can prevent him, until that law is repealed; and I do not think we have any right to make that distinction. I don't think it is legal.

Dr. Meachem: I cannot see why a man who has not the title M. D. should be allowed to put it at the end of his name. It is certainly a lie upon the face of it. I do not think this Society should uphold any such sort of conduct.

Dr. Riddell: I think that the resolution as it has been adopted is eminently proper. I believe that a man that has a diploma, and has earned it, is entitled to the distinction, and you cannot make the younger men—at least those under forty-five—believe any different. Any man that is ashamed of the way in which he was born into the medical world had better quit it.

Dr. Senn: I can see no possible advantage accruing from

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having attached to your name M. D., A. M., LL. D., or whatever other titles you may possess. If we make such a distinction I think we will stand isolated and alone in it. You can pick up the transactions of any medical society, for instance, the American Medical Association, and you will simply find your name, and that is all.

The Board of Censors have done some hard work in that room; they have spent two days; they have used their best judgment; they have reported that they have found those men qualified; the Society has voted them in; and I do not see any sense in discussing this matter over and over again. I consequently hope that the motion to reconsider may prevail.

Dr. Reeve: I understand that there have been this year seven applicants, non-graduates, before the Board of Censors for admission to this Society, of whom only four were able to meet the requirements of the Censors. Certainly they have not recommended everybody that came, or without carefulness of examination. I want to say, however, it may be very difficult for the Secretary to make any such list as this resolution contemplates. I think the earlier records of the Society are very incomplete upon those points. It is my recollection, that of a good many members it is not stated in the records of the Society whether they were M. D.'s or were admitted upon examination.

Dr. E. W. Bartlett: The question is as to whether this Society shall put down in their list of members the exact facts in regard to a case—whether it shall be recorded N. Senn, M. D., graduated at such a time, from such a college, admitted here at such a time. Those are all the facts. Is there any objection to stating that? Or if the Society have examined John Smith and found him capable, but not a graduate of any college, and the Society has voted upon him and admitted him here, are we ashamed to put down that he is admitted on examination? That is just the point. I think we are not. I see no reason at all for rescinding this vote.

Dr. Manly: I want to express my opinion upon this subject. I have no vanity, personally, in writing M. D. after my name. I never write it unless there is special reason for it. I am now receiving the Transactions of the New York State Medical

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Society, and also send ours to that state, and it occurs to me that I shall with great hesitation send ours if it is going to classify our members. I had the pleasure of sitting in the room here during the examination of some of the candidates, and after having laid aside my books for continuous study, only using them for reference, I thought, "Gentlemen, I am glad I am not before you for examination to-night." I think many of us would find ourselves very rusty. I think the examination of the Board of Censors is as strict as I have met with. There is no greenroom you have been in, that will try you more than this room, and as for making invidious comparisons and classifying our members, it seems to me an unheard of thing.

The motion to reconsider being put, was declared lost.

Dr. J. K. Bartlett: If there is no other business, I wish to give notice of an amendment to the Constitution, to be acted upon next year, making the office of Secretary and Treasurer permanent.

Dr. E. W. Bartlett: I move that the Secretary be instructed to call the next meeting of the Society at Mineral Point, on the last Tuesday in June.

Motion put and voted for by a large majority, but not unanimously.

President: I am obliged to declare this motion lost, as it requires a unanimous vote; the motion involving an amendment to the constitution, which requires the meeting to be held on the first Tuesday, either of May or June.

Dr. Stansbury: I move that the President and Secretary of this Society be authorized to appoint delegates to the next meeting of the American Medical Association. Carried.

President: The table now seems to be clear, and I again desire to thank you for the honor you did me in calling me to this position, and for the patience with which you have uniformly treated me. I trust that this has been a profitable session. I shall now have the most gratifying privilege of presenting the President-elect, Dr. Meacher. I will appoint Doctors Vivian and Fox to conduct him to the chair.

Dr. Wm. Meacher was then conducted to the chair, when Dr. Manly said: Gentlemen, I take great pleasure in presenting to you the President-elect, Dr. Meacher. [Applause.]

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Dr. Meacher: Gentlemen: In assuming the duties of this office you must excuse me from making a speech. I am not a good talker. I can only thank you most sincerely for the honor you have conferred upon me in placing me in this position. Not so much for the office of President of this Society—I do not care one hundredth part as much for that as I do for the friendship and esteem which you have shown me in placing me here, and I say to you that it shall always be my constant care to try to merit that esteem in the future. I think that I have worked hard in my profession with very small returns pecuniarily, but the fact that I possess your friendship and esteem to the extent that I do, I feel to be an ample reward for all the work I ever have done or ever can do in the profession. Should anything ever tempt me to swerve from the path of duty, I believe that your friendship will always keep me in the right place. I am well aware, better aware than any one else here, how incompetent I am to administer the duties of this office as they should be administered, but I will try to do it as well as I can, trusting always in your kind indulgence. [Applause.] Gentlemen, what is your further pleasure.

Dr. Thorndyke: The Committee of Arrangements recommend that the thanks of the Society be tendered to the Chairman of the Board of Supervisors and to Dr. McBride for their courtesy in inviting us to visit the County Hospital, etc., with our regrets at not being able to accept the same. Carried.

Dr. Mann: I would like to make a motion that a vote of thanks of this Society be tendered to the Board of Censors and the Committee of Arrangements for the manner in which they have performed their duties. Carried.

Dr. Van Dusen: I move that a vote of thanks be tendered to the President for the faithful manner in which he has conducted this Society during this session. Carried.

Dr. Robbins: I move a vote of thanks be tendered the County Board of Supervisors and to Judge Mann for the use of this room. Carried.

Dr. Riddell: I think that our Secretary and Treasurer deserves thanks for his past work, and I move a vote of thanks be tendered to him. Carried.

President: I will nominate for the Committee on Ethics,

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Drs. J. K. Bartlett, J. B. Whiting, and J. Faville, the same as were on the Committee last year.

Dr. Senn: I move these gentlemen be declared elected by the Society. Carried.

President: I will now announce the Standing Committees for the ensuing year:

Surgery—K. Hoegh, M. H. Fisk, A. R. Freeman.
Practice—G. W. Jenkins, G. F. Witter, E. H. G. Meachem.
Obstetrics and Gynæcology—D. Mason, S. S. Riddell, Phillip Fox.
Pathology—N. Senn, W. C. Butler, M. M. Davis.
New Remedies—R. M. Wigginton, C. W. Robbins, John P. Bading.
Ophthalmology—E. W. Bartlett, Charles Ottilie, C. L. Stadler.
Ethics—J. K. Bartlett, J. B. Whiting, J. Faville.

I will also appoint for the Finance Committee, Drs. Marks Senn, and Dodge.

On motion of Dr. Senn, the Society then adjourned.

J. T. REEVE, M. D.,
Secretary.

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ART. II.—INFLUENCE OF MIND UPON THE BODY.

THE ANNUAL ADDRESS, BY IRA MANLEY, M. D., OF MARKESAN, PRESIDENT.

Members of the State Medical Society, Ladies and Gentlemen:

Mr. Braid tells us in his little book on Hypnotism, that he requested four gentlemen in good health, and from forty to fifty-seven years of age, to lay their arms on the table with the palms of the hands upwards. Each was to look at the palm of his hand for a few minutes with fixed attention and watch the result. Entire silence was enjoined. What happened? In about five minutes, one, who is now a member of the Royal Academy, stated that he felt a sensation of great cold in his hand; another, who is a very talented author, said that for some time he thought nothing was going to happen, but at last a darting, pricking sensation took place from the palm of his hand, as if electric sparks were being drawn from it; the third gentleman, lately mayor of a large borough, said that he felt a very uncomfortable sensation of heat come over his hand; and the fourth, now secretary of an important association, had become rigidly cataleptic, his arm being firmly fixed to the table.

The character of Mr. Braid's researches led them to expect some sensation, the nature of which would depend on the accidental condition of the hands, or the preoccupation of the mind just at the time This, with fixed attention, led to the results.

It is probable that had Mr. Braid suggested other effects, the character of the sensations would have been greatly modified. That eminent physiologist and surgeon, John Hunter, who died in 1793, said: "I am confident I can fix my attention to any part till I have a sensation in it. The act is purely intellectual."

In the ages when civilization was emerging from barbarism, the wager of battle was a part of the history of jurisprudence. This appeal was sanctioned by all the forms of law, and, however preposterous the claim, by it the title to lands, or reputation, or life itself, passed to the victor; and in it, the Divine right was expected to manifest itself, or, in the words of the challenge, "grant me the single combat and God make manifest the right, yea, the wager of battle;" and yet, not infrequently the challenger, though physically stronger, was overcome, conscience making a coward of him. Such is the effect of emotion on bodily states.

The will also has its province. Prince Metternich, in his recently published memoirs, relates this of the first Napoleon: Among the paradoxes which he liked to maintain in questions of medicine and physiology, he asserted that death is often only the effect of an absence of

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energetic will in the individual. One day at St. Cloud, he had a dangerous fall (he had been thrown from a carriage on to a great block of stone, narrowly escaping severe injury of the stomach); the next day when I inquired how he was, he replied very gravely: I yesterday completed my experience on the power of the will. When I was struck in the stomach I felt my life going; I had only time to say to myself that I did not wish to die, and I live; any one else in my place would have died.*

Such facts indicate the power of the mind over the body, or the influence of imagination involving attention and expectation, emotion and will. It is not improbable that in these days, when a purely practical life only is acknowledged to be legitimate, and when everything is expected to submit its pretensions to what are called scientific tests, with our natural prejudice against what has been relegated to the domain of the curious but useless, we give too little place among our medical forces to this power in some of its phases.

To say that the result effected by some "irregular practice" is only "imagination," although it may have shown a remarkable influence, and a power that ordinary medicines have failed to exert, is not doing justice to our own intelligence. Imagination is a pervading force, and we shall be wise in our ministrations with the sick, not to forget that we have in it a baleful depressing influence, or, if rightly guided, a hopeful, cheering presence, that brings comfort and health.

Dr. Tuke, to whom I am indebted for many thoughts and illustrations, says: "I want medical men who are in active practice to utilize this force, to yoke it to the car of Apollo, and, rescuing it from the eccentric orbit of quackery, force it to tread with measured steps the orderly paths of legitimate medicine."

The intellectual philosopher tells you that this power is the necessary condition of the higher function of intellectual achievement and progress.

Plain truth is common-place, memory is the servant of thought and conservator of our acquisitions. It was not an idle fancy that Mnemosyne was called by the ancients the mother of the Muses.

Were the mind limited to the objects and the activities of the present it could make but little progress of any kind. Thought would be almost impossible. Generalization, by which many objects are viewed as one, would be restricted to the few present objects that could be brought within range of a single act of comparison. New individual objects of sense and consciousness would be also isolated. They could not even be named. Language would be impossible. The inventor in mechanics, the composer in poetry or music, the thinker in morals, philosophy and letters, the deviser of schemes for human well being, are each and all dependent on the resources of the imagination for every possible conjunction of cause and effect, of tendency and result. No more manifest or serious error can be committed than for the philosopher to decry imagination as inconsistent with the highest scientific activity and achievement.

* Medical Record, April 30, 1881.

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"The imagination, in its broad medicinal sense, when properly understood and guided, is a complex mental power of the greatest interest. It includes, or is closely associated with, expectation, belief, faith, imitation, sympathy, and hope." It also includes fancy — the phantasy of the Greeks. It will thus be seen that the sense in which the term is used by metaphysicians and medically is widely different. In medical language it means that a patient imagines certain bodily phenomena to have occurred, that have not (that is, a patient may imagine that he is under the influence of some drug that he has not taken); or, it is meant that certain bodily phenomena that really occurred are due to another cause than what he imagines to be the cause. The body, as we have seen, is influenced through the intellect, through the *emotions*, and through the *will*. The remarkable expression of John Hunter, already repeated, underlies the most of the phenomena referred to under the first head. He says: "I am confident I can fix my attention to any part until I have sensation in that part." You will notice that this involves attention and expectation. This being nominally an address to the general public, even if time permitted, this is not the occasion on which to explain what is known of the parts of the nervous system engaged in this inquiry, and there are difficulties connected with the subject that must yet wait for full elucidation.

Attention directed to the stomach is well known to be an important element in originating indigestion. People who talk and think very much about the healthfulness and unhealthfulness of foods are apt to experience tension or some uncomfortable sensation, which is pretty sure to grow by what it feeds upon. If, as asserted by Liebig, every conception and every mental affection is followed by changes in the chemical nature of the secreted fluids, and to the intellectual we add the much more marked disturbances from emotional states, we have in the indigestions thus originated a formidable and prolific source of endless degeneration.

A single example of the morbid effect of imagination may be seen in the following common occurrence. A child says: "Thinking of that powder makes me sick." Here is no physical agent, but there is the representative idea in the mind.

Actual pain is caused by expectation. A medical friend of mine can hardly go to the door in a frosty day with spectacles on his nose but he feels the sting of frost communicated through the metal frame. He got the idea years since in seeing spectacles armed with cloth to prevent this accident in a person who habitually wore glasses in the open air.

In the system of provings instituted by Hahnemann, we have an excellent illustration of mental effects on bodily sensations. To a healthy unprejudiced person, a pellet of say the thirtieth attenuation is given, which is entirely inert;* all sensations or symptoms occurring for the succeeding seven or thirty days, or till the medicine terminates its action, are to be attributed to the medicine, and to be noted. From such provings the

* Dake, Chairman Committee on Materia Medica, Homœopathic Institute, Milwaukee, 1880.

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symptoms occasioned by common salt, or natrum muriaticum, as laid down in Jahr's Homœopathic Materia Medica, number 450; and those noted for chalk numbered over 1000. I will read a few of the symptoms produced by chalk, or calcarea carbonica: Shooting or drawing pains in the limbs, chiefly at night, or in change of weather; great tendency to strain the back in lifting; strong desire to be magnetized; great plumpness; excessive obesity; on walking in the open air, sadness, with tears; at night asthmatic suffering, anxiety, heat, pains in the stomach, and præcordial region, thirst, beating of the head, toothache, vertigo, headache, fear of losing the reason, and many other sufferings; swelling and distortion of the bones, etc., etc. Such are a few of the sensations and symptoms felt from an inert or imaginary dose, and, I doubt not, honestly made record of. Felt because there was expectation and attention. This corresponds with the experience of medical students when reading their first book of practical medicine, and which is so cleverly satirized by a writer in the Spectator of March, 1710.

The experiments of Charcot and others are drawing attention to the almost forgotten psychical anæsthesia, called variously Hypnotism, Mesmerism, Braidism, the odic force of Reichenbach, also called magnetism; or Hammond's syngignosticism; or Wordsworth's Thymecstacy. In 1829, Cloquet removed a woman's breast during the mesmeric sleep. In 1843, Dr. Elliotson published his little work entitled, "Numerous Cases Operated on Without Pain, in the Mesmeric State." And so many were the well-attested facts regarding this curious effect of imagination, that Sir John Forbes wrote thus in his Review:* "Indeed, we hesitate not to assert that the testimony is now of so varied and extensive a kind, so strong, and, in a certain proportion of cases, so seemingly unexceptionable, as to authorize us, nay, in honesty compels us to recommend that an immediate and complete trial of the practice be made in surgical cases."

Scarcely had this article appeared when the first operation under the influence of ether was performed in America. Ether being more certain and less troublesome, it at once took its place as *the* anæsthetic. The Hypnotic is a peculiar kind of sleep brought on by the attention being closely fixed on some object.

Dr. Beach in the Medical Record, January 15, 1881, defines it as a suspension of functions of the center for ideas and also of the will.

Dr. Beard defines it a concentration of nervous activity in some one direction, with corresponding suspension of nervous activity in other directions. He names it "Trance."

His theory is that trance, or hypnotism, is a functional disease of the nervous system, in which the cerebral activity is concentrated in some limited region of the brain, with suspension of the activity of the rest of the brain, and consequent loss of volition.

To produce this condition Mr. Braid thought it necessary to look upward at some bright object, by which fatigue was occasioned. Mr.

*The British and Foreign Medical Review, October, 1846.

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Beard says it makes no difference what is done, if only the subject believes, or fears, or wonders, or expects the condition to result from a certain posture, some persons, not all, will become hypnotized. Animals are similarly affected. A horse paralyzed and immovable at sight of fire or a railroad train is an illustration.

In animals the condition is termed trancoidal. Galen tells us that the Egyptian King Nechepsus, who lived 630 years before Christ, had written that a green jasper, cut into the form of dragon, surrounded with rays, if applied externally, would strengthen the stomach and organs of digestion. In 1854, Dr. Burq, and to-day Dr. Charcot, are doing the same thing with dynamometer, discs, and pins.

I certainly shall not try to determine whether the condition is pathological or physiological, but will leave the discussion to Drs. Nobili, Matteucci, Du Bois, Raymond, and Hammond, and will confine myself to the very meager skeleton of facts I can condense into my half hour.

The fact is, Father Kircher's hen under the manipulations of the philosophical Czermak was as completely hypnotized without as with the chalk marks and strings; and the lively crab will stand on its head and allow its legs to be cut off with the shears, or the frog will lie motionless on its back and allow its belly to be ripped open with the scissors, just as well without the mesmeric passes and strokes as with them.

The conditions alluded to are the stock in trade of a class of people who attribute them to magnetism or spiritism. For the present we must be content with the facts. As I said before, we wait for the elucidation of some things in relation to the nervous system.

In one of his lectures on intractable hysteria, Dr. Hammond says to the gentlemen of his class: "I will now call from the writing-room a female who is strongly hysterical; I will give her to understand that I am about to apply a new system of practice, the accounts of which are very strong in its favor as a curative in diseases like hers; I will tell her that by the application in a particular way of a plate of gold to her arm she will experience remarkable sensations in the part; and in a short time thereafter the feeling of that and the neighhboring regions will be destroyed. But, instead of using a gold disk, I will take one of tortoise shell, and you will probably find that all the phenomena I have mentioned will be produced; but I may fail, as I have made no experiments on this girl, and it is not every case that is favorable." The patient enters; the doctor shows the sensibility of the skin to be perfect. The disk, which she supposes to be of gold but is of tortoise shell, is pressed firmly on the back of the wrist, the patient feels warmth and strange sensations, but, in a few minutes says the feeling is all gone. The doctor removes the disk, and plunges a needle in the arm a half inch, and repeats this in various parts of the arm, showing that feeling is abolished. He then proposes to exalt the sensibility of the opposite arm, by applying to it a disk of platinum, but he in fact uses the same disk of tortoise shell, and the experiment is entirely successful, as she complains of great

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pains extending to the shoulder, which is soon so aggravated that the doctor is compelled to remove the disk, and the touch of a needle elicits sharp cries of pain. M. Charcot, the eminent neurologist, having adopted Burq's method of metal cure, or xylotherapy, supposes the gold and platinum both necessary to accomplish this striking effect. Dr. Hammond does all with a disk of ivory or tortoise shell. A new commentary on the caution necessary in the acceptance of what are supposed to be facts. But the experiment was successful, and the result is attributable to the impressible imagination or expectation. Whatever of imposture or pretended spiritual influence may have been practiced in its name, the fact of mesmeric anæsthesia remains. Mesmer undoubtedly believed that by passes, etc., he was able to communicate some mysterious spiritual influence. To show to what an absurd extent he believed in this power, not only over animate, but over inanimate things, when inquired of as to what baths were most healthy, he answered: "Formerly it made no difference whether it was a bath in the open air; but ever since I have magnetized the sun it is better to bathe in water that the sun is shining upon." (Rau Organon, p. 23.)*

The influence of the emotions, such as fear, hope, joy, and despair, on bodily states is well known. The emotional state seems so interwoven with the intellectual that it is hardly possible to separate them; perhaps quite impossible, as we can hardly conceive of an emotion without an accompanying conception or idea; yet the emotion of terror, for instance, is very strikingly contrasted with quiet, intellectual occupation; and is often very little under the control of the will. Spenser, in his Faerie Queen, thus portrays it:

> "He answered nought, but adding new
> Feare to his amazement, staring wyde
> With stoney eyes, and heartless hollow hew,
> Astonisht stood as one that had espyde
> Infernal furies with their chaines untyde."

Fear, when strong, expresses itself in cries and efforts to escape.

The battle-field constantly affords examples of an engrossing emotion, blunting sensation. The wounded of a victorious army forget their pain. When Richmond fell, in 1865, who that was with the sick and wounded but will remember how, occupied with thoughts of home and friends, and the certainty of soon seeing them, all sense of pain or of discomfort was for a time lost? A writer in the Cornhill Magazine, reporting the battle of Monte Rotundo, 1867, says: "All day long the battle raged; the troops were fainting with hunger and fatigue, but the wounded were the most patient sufferers I ever saw; the certainty of victory chloroformed the pain."

The influence of emotion upon muscle, both voluntary and involuntary, is sometimes remarkable. Of all dreadful maladies hydrophobia is, perhaps, the most appalling. Dr. Rush, one of the most accurate

* Palmer on Homœopathy.

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observers, affirms that fear has originated it. Trousseau expresses doubts, but says he has known physicians, men of strong minds and courage, who, although well aware of the conditions needed for the development of rabies, were subject for several months, and even years, after attending and dissecting persons suffering from hydrophobia, with more or less distressing attacks of dyspasia, on the mere recollection of the awful scenes which they have witnessed. But such cases may be recovered from. Chomel thinks that if the virus is in the blood, recovery is impossible.

The influence of emotion on the muscular heart would excite our wonder were it less common. Terror or joy alike cause palpitation, or it may assume an irregular form with intermissions, or even spasms. It may be laid down as a general principle that pleasurable emotion increases the activity of the vital functions, while painful ones depress them. The last is illustrated in the melancholy close of life of John Hunter. A difference of opinion between him and the governors of St. George's hospital, with regard to the admission of certain pupils, grieved and offended him. In the discussion that followed the doctor ceased to speak, retired from the table struggling to suppress the tumult of passion, and with a deep groan fell lifeless into the arms of one of the hospital physicians. I presume there may not be a medical gentleman present who has not used this case with his patient suffering with organic disease of the heart, to impress the importance of avoiding emotional or physical excitement. And, curiously enough, pleasurable emotion has its illustration in the doctor who relates of himself that, visiting a theatre where the renowned Mrs. Siddons was to act, he found that he had forgotten to take a pocket-handkerchief, and he was quite certain that he should shed tears; but, the thought that he had not that requisite quite stopped every tear, and he even felt ashamed that he could not cry! The want of a handkerchief staunched his tears, but passion fatally depressed the action of his heart.

It may hardly be necessary to allude to the effect of passion on a nursing child. The mother who wishes to rear her offspring avoids almost instinctively all excitement; a single outburst of passion with some mothers is sufficient to develop convulsions that may result fatally to the infant. Fright has induced Rheumatism, and fevers are brought on by mental emotion. Sir Samuel Baker, after describing the pernicious African fever, says that passion or grief is almost certain to be succeeded by fever. Full occupation of the mind was prophylactic against it. Even that disgusting and fatal disease, Small-Pox, has pretty surely more than once originated from mental emotion. It might, if time permitted, be interesting to relate cases where the action of imaginary medicines has produced extraordinary effects, also effects quite contrary to the usual action of drugs, as, active purgation from pills of opium, taken under the supposition that they were cathartic, or sleep procured by a purgative pill supposed to be an anodyne. It is doubtless true that we now use

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this unquestionable force largely in the cure of disease. It may seem egotistical in me to inquire whether the imagination can be so directed as to make it more available than it now is. In this age of hurry and intensely practical life, are we not too much inclined to increase doses and discover new appliances, instead of using what we have with a just discrimination?

Dr. Rush, than whom few have had a greater or more successful practical experience, says: "The remedy I proposed to use might be of doubtful utility, yet never did I prescribe until I had worked up my patients into a confidence bordering on certainty of its probably good effects, and the success of this measure has much oftener answered than disappointed my expectation."

The will of the patient must be aroused; the determination to recover is of the utmost importance. The German physician, Walderstein, when sick, exclaimed, "Oh, if I could once make a resolution to be well." Very remarkable instances of this power might be related, that would fully vindicate the opinion of the whaling captain who said to Dr. Kane, the Arctic explorer: "Bless you, sir, the soul will any day lift the body out of its boots." Who that has read the life of Dr. Geo. Wilson, F. R. S. C., Professor of Technology in the University of Edinburg, can fail to admire the man for the force of soul that triumphed over his weak body and almost set it at defiance? or the electrician, Mr. Cross, who after being bitten by a cat that soon after died of rabies, finding himself attacked with the terrific disease, by most determined and resolute action, finally recovered. Hope and expectation may be excited in a definite manner. With the mind properly engaged, it is possible to get favorable results from much smaller doses than we often give. But I am not here as a clinical lecturer. Each person intrusted with the care of the sick, whether physician or nurse, should be an artist. Don't depend on the patient to originate ideas. In disease the condition of the body is such that it no longer readily adapts itself to surrounding conditions. The mind should be guided by suggestion. As disease progresses, the altered look will, to the friends, make its own comment of wasting vitality. This weakly wise persons, and even uninstructed nurses, think they show a proper discrimination by commenting upon in the presence of the patient. As a depressing agency there is nothing more certain and rapid. Such imbecility is rarely practiced except by casual visitors. Mothers almost instinctively understand how to use their immense power over the mind discreetly and well. We might learn a lesson from Samuel Hahnemann, who, whether conscious of it or not, showed the perfection of art in the mental control of disease.

He taught his patients to expect everything from his medicine. Nature was the disease, and had no part in the cure. His medicines were attenuated by trituration and agitated in dilution; this dynamized or spiritualized them, thus raising entirely inert substances to an enormous potency. With this complicated preparation he approached his

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patient and made a most minute examination for symptoms; then, with euphonious *similia similibus curantur*, the only law of cure, the only correct, the only direct, and the only possible means to be employed by human skill,* he prescribed one medicine only, whether for acute or chronic disease. All chronic disease is traceable to psora sycosis or syphilis; its nature is not material but spirit like.† The names of drugs are changed, the entire system is an epoch of new words and phrases. The administration of medicine was dramatic. The dose must be most minute—most minute—he repeats. The single pellet is placed upon the tongue, or if a rapid effect is desired, the administration is by olfaction; the pellet is placed in a vial and the patient is to smell at it with one nostril only. The patient may expect occasional aggravations of symptoms, and is to watch and report from day to day. If, at the end of seven days, there is improvement, the symptoms being carefully observed, the doctor will refuse to repeat the dose, as the medicine has not terminated its action. The patient meantime understands that this spiritualized potency is searching out and eliminating the disease—possibly in fourteen days the dose will have terminated its action, and will have to be repeated, and this dose, Hahnemann's favorite thirtieth dilution, was utterly inert. The dose is imaginary, but in a considerable number of cases the cure will be real. The patient has, by his rules, been compelled to avoid excesses at table, has taken only nutritious and digestible food, instead of eating late and rich suppers. The clothing, the air of the sleeping and living rooms, the amusements, and the mental occupation all carefully regulated, the nutrition is improved, the patient sleeps; hope and expectation are fully engaged, and returning health assures the patient and the doctor that the medicine has wrought the cure.

As you will infer, this system could have but a limited application. This his followers have long since discovered, and are combining a rational medication with the hygienic and mental forces used by Hahnemann.‡

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* Wesselhoeft's Organon, p. 90.

† Organ, p. 23, 24, 25-68 (Smythe on Med. Heresies.).

‡ Dr. Kidd, Lord Beaconsfield's medical adviser, a representative Homœopath, when questioned in regard to consultation with Dr. Quinn, a regular practitioner, admitted that his practice did not differ from the regular school. Dr. Barlow, of New York, a homœopath of excellent reputation, uses the following: Sulphur 2 grains, Extract of Conium 90 grains, Quinine 30 grains, Morphine 3 grains, Podophylline 3 grains; for 30 pills. Give one two or three times a day. Dr. Carnahan, a representative homœopath of Wisconsin, while practicing in Indiana as a homœopath, made his reputation by giving 15-grain doses of Quinine in pernicious malarial fever. He also gives in anæmia: Tincture of Iron 10 drops, with 12 drops of diluted Phosphoric Acid with syrup, three times a day.

The after-treatment of a case of ovariotomy by Prof. R. Ludlam, reported in the Clinique, Aug. 15, 1880, Homœopathic, is a frank admission of the above assertion. For many successive days he injected hypodermically one-tenth to one-sixth of a grain of morphine, and gave six to eight grains of quinine. He says: "Contrary to my usual custom, which is to make a single injection, I continued the morphine, as in her weak state with a prospect of exhaustion from lack of nourishment, I could not safely allow

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Pardon me if I dwell on this interesting and much-talked-of character for a moment. Hahnemann seems sincerely to have believed in his power to magnetize and thus give potency to that for which otherwise he would have claimed no medical properties. He was visionary. In Vienna he had become acquainted with and was influenced by Mesmer,* who even claimed to have magnetized the sun, and whose pretensions were becoming popular. Deslon of Paris, Gmelin and Reicke of Stuttgard, and Kluge of Berlin, had become proselytes.† A famous Heidelberg physician had magnetized the university buildings in order to inspire the students to greater zeal and higher attainments in science; it is not singular that Hahnemann should have adopted the dynamizing or magnetizing theory, as this gave a seemingly rational claim to potency for attenuations.

Absurd as seems to us the idea of magnetizing inanimate substances, it had at that time taken a strong hold of many minds. A few years later Dr. Elliotson claimed that by looking at a gold sovereign he had magnetized it so that a girl who took hold of it was instantly thrown into a coma and M. Puysegur magnetized trees and ropes by which he converted those who clung to them into sleep-walkers. Surely imagination here is not guided but has become the controlling power.

"Truth unadorned is common-place." Dr. Johnson in one of his allegories makes truth everywhere impeded and often baffled by falsehood till Jupiter ordered Pallas to weave her a beautiful robe called fiction, in which she fascinated and led many who before were repelled by her plainness; it may be we have made a mistake in disrobing our art. We have banished our learned nomenclature. Our books are so simplified that the lad who has mastered his fourth reader feels competent to read medicine. In this we might have done less and reserved the power of a justifiable mystery. It would at least have given charlatans a little trouble to read formula who now have our best remedies advertised as patent almost before we have established their value. On opening one of our books something would have been left to the imagination unless the reader had some learning or a disposition to study. I said "truth unadorned," but if we have left out technicalities, our literature is beautified by its simplicity, its clearness and vigor, its honest purpose, and learning so vast and profound that only the utmost industry will enable us to keep our feeble pace with its advancement.

The names of a few only of our writers need be repeated to make this

her to flounder about with worry and unrest." "We were satisfied that the morphia did not disagree or do harm, as the effect was most grateful in every instance." "The quinine was given as a tonic and to promote digestion."

We will here caution our homœopathic neighbors against the loose way in which Dr. Barlow prescribes these excellent remedies, as, mismanaged, they are disturbing agents, and will fall into unmerited disrepute. A small minority only of homœopathists at present practice Hahnemanism.

* Palmer.

† Dendy, Philosophy of Mystery.

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apparent, and this I cannot do better than in the words of a recent writer in the Homœopathic United States Medical Journal. He says: "We want solid acquirements everywhere; we want in our schools more pathologists, and learned physicians, as Bennet, Watson, and a score of others; writers, for instance, upon female diseases and their surgical and mechanical treatment, and writers on obstetrics, such as Bennett, of London, Sims, Simpson, and Barnes. When will issue from our ranks writers of such worth as Rayes Cazenave; or Wilson on Diseases of the Skin, West on Children, Ricord on Syphilis, or such pathologists as Rokitansky, Virchow, or Rock," and, he continues, "Homœopathy is here a humiliated beggar to allopathy." So hope we that our loss of pedantic ornament is vastly more than made up.

From the attention now being given to hypnotism, it is not unlikely we shall have an epidemic of experiments and cures. Sixty years ago it was a power recognized by some of the best men in the profession. The class of cases treated by this method were largely paralytic or rheumatic. In 1849, Agassiz wrote a very curious account of the effect of mesmerism on his own person. Dr. Carpenter, Sir John Forbes, Sir James Simpson, and others, have investigated the subject carefully, and their opinion is sufficient guarantee of the character of the phenomena. Mesmer claimed that a magnetic influence passed from himself to the subject. Mr. Braid, whose experiments were careful and complete, was convinced that the impression made on the subject was dependent on the state of mind and body, irrespective of any influence called into action by another. All was the effect of imagination, or expectation and attention. He treated a large number of patients successfully by this method, and he says: "It is certain that the imagination has never been so much under our control, or capable of being made to act in the same beneficial and uniform manner by any other mode of management hitherto known."

I confess that, personally, all my prepossessions and prejudices are opposed to this class of mental operation. Education and association alike have kept prejudice alive. This has doubtless come from seeing it in the hands of ignorant pretenders to spiritual influence. Yet this is not a good reason why the subject should be avoided. The philosophy of the condition is now fairly understood, and what is known removes it from the realm of the supernatural and brings it to the test of science. Should, as years since seemed likely, out of these phenomena be evolved an addition to our therapeutical force, let it have such attention as it merits. And yet, I do not expect all of us to become enthusiastic in its adoption as a remedy. Engaged as most of us are in the routine of practice with our already inexhaustible materia medica, we hardly feel the need of anything new, especially if it is to detain us, if only for a few moments, at the bedside of a patient. Aside from this, our habits tend to make us essentially mechanical, and the phenomena of mind are as unfamiliar and novel to many of us as they would be to the mere physicist, who, of all men, has the strongest prejudices against anything he cannot see, or touch, or measure.

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Let us not forget that some minds are so constituted that, without reasoning, they accept the mysterious as supernatural; and we need be careful that phantasy does not become hallucination, and that while we cure rheumatism by hypnotism we do not unbalance a brain, and make a patient for the hospital for the insane. Treat this force as we do strychnia, a useful tonic; but, mismanaged, noxious and possibly a fatal poison. In a recent letter received from Dr. Beard, he says: "The practice of inducing trance does not have any injurious effect upon the subject, but is rather beneficial." This may be true, yet the Doctor, in a paper, "The Problems of Insanity," read before the New York Medico-Legal Society, April, 1880, says of trance that "its severer forms are insanity;" and he copies from the Journal of Mental Science this, quoted from Maudsley, in answer to the question "Is the profoundly entranced insane?": "He certainly is, and within a very few years a case of somnambulistic form of trance has very properly been acquitted of the crime of murder on the ground of insanity." He defines insanity as "a disease of the brain in which mental co-ordination is seriously impaired." This occurs as the subject emerges from the trance state, "when he may commit acts for which his mental inco-ordination, in the eye of both science and the law, makes him irresponsible."

I trust, gentlemen, that nothing I have said will be received as an intimation that truth and honor with our patients is to be sacrificed. What we do, or promise, must be ever guarded by this consideration. The sacrifice of virtue for a temporary benefit would in the end prove a poor compensation indeed. In the ancient Rome the temple of honor was so constructed that it could be approached only through the temple of virtue, and truth is one of the highest of virtues. As a Society, or as individuals, we act not alone for ourselves, or for our state; we represent the character and moral sentiment of the entire profession. Our schools supply the medical staff of the army and of the navy; also the hospitals and public institutions. This makes its own comment on the estimate in which our profession is held by the public, and while we congratulate ourselves on the high character of the gentlemen now holding these positions, our care should be that our teachings cultivate not only the utmost learning and skill, but the highest moral character in those now preparing to fill the responsible duties of professional life.

The eloquent Ruskin, in defining the higher forms of imagination, says: "Imagination sees the heart and inner nature." "Imagination is a pilgrim on earth, and her home is in heaven." So, disciplined as we hope to become in the use of this faculty, though often groping in the twilight, we shall approach the clearer day, and, not satisfied with the material forms we to-night have been considering, we shall follow heavenward to the "perfect light."

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ART. III.—RECENT PROGRESS IN SURGERY.

BY N. SENN, M. D., MILWAUKEE, CHAIRMAN OF COMMITTEE ON SURGERY.

During the last few years the principles and practice of surgery have undergone such a complete revolution that it would be impossible to allude to all of the recent improvements, during the brief time allotted to the reading of this report. I have endeavored to invite your attention only to such topics as are of practical interest to every surgeon.

I have deemed it advisable not to weary you in relating the results of my own individual experience, but have attempted to present to you a resume of the "Recent Progress in Surgery," compiled from the best surgical literature at my command, thus bringing before you, in as compact a form as possible, the rich experience of the acknowledged leaders in this department of the healing art.

SURGICAL PATHOLOGY.

Hydrops Articulorum Intermittens.—Dr. A. Seligmueller* has collected twelve cases of intermittent hydrops of the knee-joint, to which he adds one case that came under his own observation. The disease affected individuals otherwise in good health, and appeared and disappeared at regular intervals, and was not attended by fever or local symptoms denoting active inflammation. It attacked one or both joints. The swelling made its appearance without any premonitory symptoms, and in a short time attained its maximum size, when it gradually disappeared spontaneously without leaving any impairment of the structures or functions of the joint. In the majority of cases the disease appeared with mathematical precision, on a certain day, and sometimes at a fixed hour, so that the patients were able to predict the exact time when they expected an attack. Among the patients were seven females and six males; their ages were between fifteen and fifty-four. The duration of the disease varied from a few months to twenty-five years. Pregnancy interrupted the disease. The duration of each attack was from three to eight, and in most cases from four to six, days. The attacks made their appearance on the eighth, eleventh, or thirteenth day, or every four weeks. In nine cases both knee-joints were involved, in two cases other joints, and in the remaining twenty-one cases the joint affected is not specified. The pain was slight and the swelling confined to the capsule of the joint. Dr. S. looks upon the affection as a vaso-motor lesion, as the evidences pointing towards a malarial origin were not sufficiently marked to attribute it to this cause.

*Centralbl. f. Klin. Med., Maerz 1, 1880.

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Fat Embolism.—The occurrence of fat embolism in the pulmonary capillaries has recently attracted considerable attention among German pathologists. This pathological condition is most frequently met with after extensive fractures or crushing of bone, or during the progress of inflammatory diseases affecting the medullary tissue of bone.

Zenker, in 1862, accidentally discovered the presence of oil globules in the pulmonary capillaries, on making a post-mortem examination on the body of a man who had been crushed between two vehicles. During the same year Wagner made a number of similar observations, but he attributed the presence of fat globules to some changed condition of pus. A few years later Wagner and Busch, of Koenigsberg, published their researches on the origin of fat embolism, their views being based on experiments made on animals, and their own clinical experience. They have shown conclusively that the fat globules found impacted in the pulmonary capillaries usually take their origin from the fat vesicles in the medulla of bones, and that, as a necessary consequence, fat embolism occurs in cases of injury or disease of this structure. It has been found that the more extensive the crushing of bone the greater the danger for this complication to arise. Sudden death, after extensive crushing of bone, is now frequently attributed to this complication, instead of shock, as was invariably done before this condition was recognized. Bergmann injected small quantities of pig's fat into the saphenous veins of cats; the animals usually died in a quarter of an hour. On post-mortem examination the pulmonary capillaries were found clogged with an accumulation of fat globules. In case the animals survived for a longer period, the capillaries of distant organs were found in the same condition.

Of forty-five observations published by Busch, this condition followed twenty-three times after fractures, three times during osteo-myelitis, twice from bony tumor of the lower extremity, once from tumor albus, once in caries, four times in case of abscess in regions rich with fat, and the remainder in metritis and fatty degeneration of the arteries from Bright's disease.

Scriba,* who has studied this subject with great care, as the result of experimental research and clinical observations, gives us the following as his own views: the greater portion of fluid fat, which enters the venous circulation after fractures, becomes arrested in the pulmonary capillaries; only a small portion of it, after having passed through the pulmonary circulation, produces embolism in the other organs or escapes with the urine on the second or fourth day after the injury. On the eight or twelfth day the emboli in the lungs are detached and enter the general circulation, to be removed through the kidneys. This process is repeated until the whole amount of fat is removed. Fat probably never enters an intact blood-vessel. Fat gives rise to harmless emboli,

*Untersuchungen ueber die Fettembolie, Leipzig, 1879.

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but these may endanger life by mechanical destruction of blood-corpuscles. Besides in the lungs, kidneys, liver, and spleen, emboli are constantly found in the brain and spinal cord, more especially in the vessels of the pia mater and plexus chorioidei. In severe cases death results from arterial anæmia of the brain, and not from disturbances in the pulmonary circulation. The most important symptoms are: presence of fat in the urine, diminution of temperature, temporary dyspnœa, and hæmoptysis, without fever, irregular pulse and respiration, convulsions, and paralysis.

The Relation of Marrow to Leukæmia.—The pathology of leukæmia has not, as yet, been sufficiently elucidated to enable us to arrive at positive conclusions. Some investigators consider leukæmia as a primary disease of the blood (Bennet, Robin, Biesiadecki); others of the spleen (Zenker); while Mosler and Neuman have found the marrow of bone the original seat of the disease.

Neuman, of Koenigsberg, has carefully studied the post-mortem appearances of the myeloid tissue of bone in cases of leukæmia.* Although the symptoms during life do not always point towards the bones as the seat of the disease, a microscopical examination of the marrow, in these cases, never failed to furnish evidence of extensive pathological changes. Among twenty-two cases, only in four were symptoms present, during life, which were to be referred to disease of the interior of the bones. These symptoms consisted of pain in different bones (the sternum being the most frequent seat), tenderness, and in one case atrophic depression. Microscopical examination of the marrow revealed the existence of numerous round cells, resembling white blood-corpuscles and nucleated red blood-corpuscles, lodged in a dense network of fibrous tissue. Charcot's crystals were found in the medulla as well as in the blood throughout the body.

Cancer.—The best pathologists of the present day consider cancer a purely local disease, produced in most instances by a local cause or causes. Since this view has become firmly established, surgeons have become more hopeful in respect to the operative treatment of this dreadful disease, and their operations have been characterized by a thoroughness which could only find an explanation in their firm belief in a local cause. The extensive and reliable statistics of Billroth are conclusive in demonstrating that cancer may be permanently eradicated, provided the operation is performed sufficiently early, and the incisions made through healthy tissues. It is more than probable that the line of distinction between different forms of cancer will be gradually lost, and that in the light of future research the different varieties will be considered as one and the same growth, differing only in the relation of the cellular elements to the intercellular substance. According to Winiwarter,† the cause of cancer may be: 1st, the part affected has been the seat of an anomalous congenital development, or the organ affected has been

*Berliner Klin. Wochenschr., Mai 17, 1880.

†Beitraege zur Statistik der Carcinome, Stuttgart, 1878.

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impaired by defective development and has not reached the normal form or position; 2d, the affected parts have been repeatedly injured, or have been exposed to the action of chemical agents; 3d, the cancer originates in a part which has been once injured and not completely repaired; 4th, the cancer is attributed to a blow, kick, or pressure, showing no appreciable injury; 5th, the cancer is the result of permanent pressure; 6th, the cancer originates from parts of the skin or mucous membrane which have been the seat of epithelial changes, as after frost bites, erysipelas, blenorrhœa, etc.; 7th, the cancer springs from pathological formations of the skin, as hypertrophy of the papillæ (warts, papilloma), cysts, and cicatrices; 8th, the cancer commences in a chronic infiltration, the result of an acute inflammation; 9th, finally, the cancer may develop from a chronic ulcer of the skin or mucous membrane, which are the seat of active fruitless proliferation of epithelium, without leading to cicatrization.

Prof. v. Nussbaum is very positive in his views concerning the ætiology of cancer.* He says: "The causes of cancer are purely of a local character. It originates, almost without exception, in a *locus minoris resistentiæ*, at a time when the conditions for its development have taken place in the circulatory and nervous system, which is pre-eminently the case in the aged. There exists no congenital dyscrasia, no contagiousness, no heredity; cancer primarily is a purely local affection, but may be conveyed to distant organs by the circulation."

Operations for cancerous growths should be thorough. The gradual blending of the pathological product with the normal tissue, in the neighborhood of the tumor, renders it difficult to decide where to make the incision; the only safeguard is to include rather too much than too little of the surrounding tissues. Another important rule is, to make the incisions in the direction of the chain of lymphatic glands and remove as many of them as possible, although they may present a normal appearance to the touch and naked eye. The surgeon who makes plans in advance how to close the gap after an excision of a malignant growth, as a rule, operates badly. The prime indication is to remove the diseased tissues thoroughly and completely, paying, in this respect, no attention to the subsequent restoration of the defect. As all sources of irritation should be avoided, it is a great mistake to aim to heal the wound by suppuration and granulation. The antiseptic treatment, careful drainage and suturing, should be practiced in order to give the wound the best possible chance to heal by primary union.

Ætiology of Chronic Ostitis and Periostitis.—Luecke has recently written an interesting and practical paper on this subject.† In many instances of chronic inflammation of bone and periosteum he attributes the attack to an antecedent or co-existing infectious disease. The poison of typhoid fever not only locates itself in the intestines, but in some

*Bayer. Aerzt. Intell. Blatt, xxii, 11, 1875.

†Deutsche Zeitschrift fuer Chirurgie, Band xiii, Heft 3 u. 4.

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cases also in the joints and periosteum, exciting suppurative synovitis and periostitis. This complication usually occurs towards the termination of the fever or during convalescence. The well-known spontaneous dislocation of the hip-joint, during an attack of abdominal typhus, is simply the result of an insidious inflammation of the joint with destruction of the ligaments and rim of the acetabulum. The product of inflammation is absorbed. The same process takes place quite frequently during the period of desquamation in scarlatina, and less frequently during the course of an attack of variola, diphtheria, pertussis, and erysipelas. Synovitis, the consequence of gonorrhœal infection, is now generally recognized as a distinct complication of that affection. Syphilitic infection resembles pyæmia in its clinical behavior, from the fact that it may locate in any organ and leave depots of the poison, from which destructive processes may originate at any time. If the poison of any infectious disease is deposited in a certain part of the osseous system, it may remain latent for an indefinite time, and only give rise to morbid manifestations when the patient is exposed to some other exciting causes.

Tuberculosis of Bones and Joints.—Modern research and experiment have added a great deal of positive and practical information to our knowledge of this hitherto-obscure part of surgical pathology. Rokitansky was the first one who found tubercular deposits in synovial membranes, an affection to which he applied the term tubercular arthromeningitis. According to Kocher and Volkmann, tubercle has a preference for the epiphysis, either beneath the articular, or near the epiphyseal cartilage of young persons. The deposit may be single or multiple—remaining local for a long time, or giving rise to diffuse general tuberculosis. The product of inflammation and destruction in and around the tubercular infarct may gain entrance into the adjacent joint, and, by infecting the synovial membrane, cause tubercular synovitis, or it may find its way to the surface, thus rendering the prognosis less unfavorable.

The tumor albus of Wiseman essentially consists of a tubercular degeneration of the synovial membrane and its adjacent tissues. In modern literature this affection is usually designated by the term fungous arthritis (Billroth), or synovitis hyperplastica granulosa (Hueter). Koester made the assertion that miliary tubercles are imbedded in the granulation tissue, being found not only in the synovial membrane but also in the granulations lining the fistulous tracts, and in the periarticular cavities. Volkmann and Koenig are of the opinion that the process does not originate primarily in the synovial membrane, but reaches this structure from some focus in the cancellous bone tissue near the articular cartilage.* General miliary tuberculosis has occurred in cases of fungous arthritis where the clinical history indicated clearly that the infection took place from the diseased joint, where the autopsy proved the

*Klinische Vortraege, No. 168 u. 169.

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absence of any other source of infection.* I have seen at least three cases of tubercular meningitis following fungous arthritis of the hipjoint.

The infectious nature of fungous arthritis has been well established by Herman Hueter.† With a common hypodermic syringe he injected into the knee and ankle joints of dogs an emulsion of sputa from phthisical patients, and succeeded in every instance in producing fungous arthritis. One of the animals died of acute miliary tuberculosis. An emulsion made of the fungous granulations, taken from the joints of these animals, and injected into the peritoneal cavity of two healthy dogs, produced pulmonary tuberculosis, as was proved by a post-mortem examination. He therefore arrived at the conclusion that the synovitis granulosa is a tubercular disease.

Max Schueller‡ succeeded in promptly producing pulmonary tuberculosis in dogs and rabbits by injecting an emulsion of phthisical sputa mixed with Bergmann's fluid into the pleural cavity, or through a tracheotomy wound into the bronchial tubes. In animals thus infected it was found that slight traumatic causes would excite fungous arthritis. He considers osteo-tuberculosis not as grave an affection as when the same process involves the lungs. Entire recovery with anchylosis may take place without treatment, and this result is quite sure to follow if the disease is removed thoroughly and at an early date.

Numerous experiments on animals, made by Riedel‖ with a view to ascertain the influence of traumatism in causing tuberculosis of joints, tend to show that any amount of traumatism was insufficient to produce this result unless the animals have been previously infected with tubercular matter. In the latter case the local manifestation was promptly produced by slight injuries.

Rydgier,§ in a very valuable paper on this subject, aims to combat the views entertained by Billroth, Koenig, and Esmarch, that resection of tuberculous joints has no influence in preventing general tuberculosis, comes to the following conclusions:

"1st. The earlier the local deposit is removed, the less length of time the patient is exposed to the danger of general infection, and the more certain are we that general infection has not taken place, and that by the procedure we save the patient.

"2d. The earlier we operate the more limited the disease and the better the general condition of the patients, both of those circumstances affording a better prospect for an early and favorable issue.

"3d. Long-continued suppuration not only debilitates and is the cause of fever, but may result in disease of the kidneys, a fatal *sequela* which might be prevented by an early and complete resection."

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* Virchow u Hirsch, Jahresbericht, 1879, Band ii, s. 346.
† Deutsche Zeitschr. fuer Chirurgie, Band xi, Heft 3 u. 4.
‡ Centralblatt fuer Chirurgie, 1879, No. 19.
‖ Corresp. Blatt f. Schweizer Aerzte, 1880, No. 19.
§ Deutsche Zeitschr. f. Chirurgie, Band xiii, Heft, 3 u. 4.

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Around the tubercular depot inflammation is excited which results in suppuration and the formation of a cavity which Volkmann very appropriately calls "Knochen-caverne." More frequently, however, the destructive process is accompanied by necrosis and sequestration. Billroth found that of 713 cases of fungous synovitis, 181, or twenty-five per cent., died of pulmonary phthisis, and in fifteen cases the existence of tubercular meningitis was proven by post-mortem examination. He believes that the tubercular process originates in a certain locality and invades the system by infection in a similar manner as malignant tumors. In the treatment of tuberculosis of the joints, Hueter resorts to parenchymatous injections of a solution of carbolic acid. Koenig, who approves of this method of treatment, believes that these injections destroy the vitality of the tubercle corpuscles, and, by so doing, arrest the further progress of the disease. Kocher uses injections of iodine with the same view. There can be no doubt, however, that the best and only reliable treatment for the purpose of preventing general infection consists in the *early* and *most thorough* removal of the local product, either by excision or amputation.

Micro-Organisms a Cause of Disease.—The relation of micro-organisms to disease has recently been studied with great care by many eminent scientists and pathologists, and while at present we possess but a limited positive knowledge bearing on this question, there is no doubt but that the pathology of the future will reap in this field its most fertile and profitable harvest.

Koch, of Wollstein, Germany, who has written a valuable book on this subject,* has made the discovery that the fatal and much-dreaded disease among cattle,—splenic fever,—depends on the presence of a specific micro-organism, the *bacillus anthracis*, and that this disease is capable of being communicated to other animals and to man by means of this germ. This germ is a rod-like body, in diameter one-fourth that of the red blood corpuscle of the mouse. He also discovered the presence of much smaller rod-like forms in the blood and tissues of mice, which had been infected by injecting subcutaneously putrid liquids, if the animal survived the chemically toxic effects of the product of putrefaction for a sufficient length of time for these organisms to develop themselves. He was able to communicate the disease through any series of animals of the same kind by inoculation with the blood of diseased animals. From the resemblance of the bacillus anthracis, with the hay bacillus, Buchner, of Munich, made various attempts to infect animals by injecting the latter, but failed to produce the specific disease until he modified the germs by transferring them previously to a solution of extract of meat, when the desired object was accomplished. Germs thus modified produced genuine splenic fever, and the blood of the infected animals was

*Untersuchungen ueber die Ætiologie der Wundinfectionn Krankheiten, Leipzig, 1878.

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found capable of communicating anthrax to healthy animals to the sam extent as the blood from animals suffering from ordinary splenic fever.

Prof. Toussaint, of Toulouse, has also detected the bacterium of fowl cholera. It consists of minute oval-shaped bodies 1-50,000 to 1-25,000 of an inch in diameter.

Koch has also found that erysipelas in rabbits is always attended by the presence of bacilli, and that these parasites were always present in the inflamed skin, and that their distribution corresponded to the area of skin affected. The same writer produced progressive gangrene of the tissue in mice, by injecting putrid blood. In the affected part he invariably found a definite organism—the streptococcus.

Watson Cheyne* has made careful observations to prove that gonorrhœa depends upon the presence, and is propagated by means of specific germs. Neisser found micrococci in gonorrhœal pus in enormous numbers and always of definite shape and size, differing in this respect from the micrococci found in wounds. Cheyne believes that some of these parasites are deposited in the urethra, and, by their multiplication and their irritating effect on the mucous membrane, excite the specific inflammation and its extension along the urethral canal.

LISTERISM.

The term Listerism has been coined to designate the treatment of wounds in accordance with the teachings of Lister. This method of treatment has continued to grow in favor with the profession. It has been adopted in almost all of the large hospitals in Europe, and wherever it has been introduced and thoroughly carried out, its success has been uniform. A vast amount of experience and numerous accurate statistics combine to prove its superiority to any other known method of treatment. For a long time many surgeons who were slow in accepting the antiseptic treatment of wounds as taught by Lister, used as one of their arguments against it that Lister had failed to publish his statistics. In alluding to this in his address, Mr. Bryant said somewhat harshly, that "the publication of isolated cases, however good, proves nothing; whereas, the withholding of the whole suggests much." In reply to the address and statistics of Mr. Savory, Mr. Lister presented, at a meeting of a branch of the British Medical Association, held at St. Thomas' Hospital, Dec. 3, 1879, the result obtained by him at the Royal Infirmary of Edinburgh, between November, 1871, and August, 1877, in the following table:

		Deaths.		Death by Blood-Poisoning.	
Cases.		No.	Per Cent.	No.	Per Cent.
Injury...	72	4	5.7	0	.0
Major Operations..	725	38	5.1	6	.82

Of the operations, 292 were, for various reasons, not treated antiseptically, and these furnished four deaths by blood-poisoning, the remaining 553 cases treated antiseptically gave only two deaths by blood-poisoning;

*British Medical Journal, July 21, 1880.

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one of them was due to pyæmia, after amputation of the breast, the other was the result of erysipelas.* He also gives a detailed account of thirty-two cases of operations upon, or injuries to, joints prepared by Mr. Cheyne;† in thirty-one of the cases the treatment was entirely successful. In the case of failure, an attempt was made to save a badly crushed wrist and hand; putrefaction occurred and a partial amputation became necessary. These cases include injuries and operations involving all of the larger joints, and only in one of them do we find that the temperature rose to 100° F. These statistics must convince every unprejudiced mind, as similar results have never before been obtained by any other method of treatment. Ovariotomy, however, furnishes the most conclusive evidence of the marked benefit derived from the antiseptic treatment. Mr. Thornton,‡ of the Samaritan Hospital, asserts that the mortality attending his cases of ovariotomy has decreased more than one-half since he adopted the antiseptic treatment. The following is the rate of mortality attending the first 305 ovariotomies performed by Thomas Keith, of Edinburgh: first fifty, eleven deaths; second fifty, eight deaths; third fifty, eight deaths; fourth fifty, six deaths; fifth fifty, four deaths; sixth fifty, no deaths.

The last seventy-eight were operated upon antiseptically with only two deaths, and of the last sixty-eight cases all recovered. Nussbaum lost all of his first five cases; of the first seventy-eight he lost thirty-five. During the time he employed drainage of the peritoneal cavity, he operated eighty-four times with thirty-four deaths. With Lister's method he operated one hundred and thirty-five times with twenty-nine deaths; of the last nineteen cases he lost only two. In comparing the last eighty-four operations performed by Spencer Wells, without, and the first eighty-four with the antiseptic method, we find that he lost twenty-one out of the former, and only six of the latter number. Mr. McCormac,‖ who furnishes the above statistics, gives the following opinion in reference to the importance of antiseptic surgery: "To Hunter we owe our idea of the harmlessness of subcutaneous injuries and all the great advantages to surgery that are derived from the application of this knowledge, and if in time our ordinary surgery shall become as safe as subcutaneous wounds, this we shall owe to Lister."

Mr. McCormac, in an able address delivered before the South London Division of the Metropolitan Counties Branch of the British Medical Association, treats of the most recent improvements in antiseptic surgery, and supports the claims of the followers of Lister with numerous and reliable statistics.

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* Archives of Medicine, February, 1880.

† British Medical and Surgical Journal, November 29, 1879.

‡ Correspondenzblatt fuer Schweizer Aerzte, January 15, 1880.

‖ Antiseptic Surgery by William McCormac, M. A., F. R. C. S. E., London, 1880.

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IMPROVEMENTS IN ANTISEPTIC SURGERY.

Prof. Bruns has described a new method for preparing antiseptic gauze. The following is his formula: 100 grammes carbolic acid; 400 grammes resin; 80 grammes castor oil; 2000 grammes alcohol. After thoroughly saturating the gauze with this solution, it is suspended in the air to allow the spirits to escape. A few minutes suffices to dry it, when it is packed in air-tight cases.

Dr. Neuber, of Kiel, has prepared drainage tubes of decalcined bone with a view to have them retained permanently in the wound. They are less irritating than rubber tubes, and are capable of being absorbed by the granulation tissue after they have fulfilled their purpose as drains. The tubes are turned out of healthy ox or horse bone, and are decalcined by immersion for ten hours in a mixture of one part of muriatic acid and two parts of water, when they are taken out and thoroughly cleansed with a five-per-cent. solution of carbolic acid and preserved for use in ten-per-cent. carbolic oil. Having ascertained the fact that these tubes are readily absorbed, Neuber proceeded another step, and introduced what he calls permanent dressings. The wound, being accurately sutured with catgut, and well drained with decalcined tubes, is covered with a thick compress of carbolized jute, enclosed in a single layer of antiseptic gauze, and retained with a rubber bandage. Unless unfavorable symptoms arise this dressing is allowed to remain until the wound is completely healed. Of one hundred and forty-three cases treated in this manner, in one hundred and eight only one dressing was necessary, recovery taking place without rise of temperature, thirty-five cases required from two to three dressings, and in thirty-five further cases a slight increase of temperature, the aseptic fever of Volkmann, followed.

I have used these bone drains in a number of instances, and have always observed that they are readily removed by absorption, provided the wound remains aseptic and heals without suppuration.

Prof. Maas, of Freiburg, has used a new substitute for carbolic acid—acetate of alumina. He has found a three-per-cent. solution an effective germicide. He operates under a two-and-one-half-per-cent. spray of this antiseptic, and applies a compress saturated and kept constantly moist with a solution of the same strength.

Prof. Bruns recommends as a substitute for Lister's gauze, especially for military practice, an antiseptic powder prepared as follows: carbolic acid, 25 parts; colophonium, 60 parts; stearine, 15 parts; these substances are mixed with the aid of heat, and one part of this mixture is thoroughly incorporated with seven or eight parts of plaster-of-Paris or chalk.* This powder contains two and one half per cent. of carbolic acid. It can be employed in the treatment of small wounds, gunshot wounds, and compound fractures. It has also been used with advantage in treating suppurating surfaces and ulcerating cancers. This powder forms a scab

* Correspondenzblatt f. Schweizer Aerzte, 1880, No. 15.

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with the secretions, and by thus excluding the air, and by its antiseptic properties, healing often takes place without suppuration.

Dr. Hallwachs* has made some very interesting and practical experiments in order to ascertain what becomes of organic ligatures when introduced into the living body under antiseptic precautions. He introduced into the peritoneal cavity of dogs, catgut, Czerny's silk, sponges, and rubber strings. The result of his investigations led him to the following conclusions: 1st, catgut disappears completely six months after its introduction; 2d, in place of the catgut at this time is found a dense fibrous tissue, well supplied with vessels; 3d, sponge is disintegrated, its branches are thinner, pointed, and surrounded with fibrous tissue; 4th, silk is encapsuled and only changed so far that it has imbibed fluids from the surrounding tissues, and is infiltrated with lymphoid cells; 5th, sponges compressed and wrapped with silk were rendered fragile on their surface, in every other respect they behaved like silk; 6th, elastic ligatures were found surrounded with a dense fibrous tissue, in which were found numerous particles of rubber; 7th, all of the substances lost in volume, and were compressed in proportion to their power of offering resistance.

PARTIAL EXCISION OF THE ALIMENTARY CANAL.

Until very recently the alimentary canal was seldom subjected to serious surgical operations, but the late improvements in the methods of operation, and the safety afforded by the antiseptic treatment of wounds, have rendered the most remote portion of this tract accessible to the surgeon's knife. Many diseases which heretofore baffled the skill of the physician, will in the future be successfully treated by the surgeon. Operative surgery has of late taken possession of this untrodden field, and has here achieved its most brilliant results. Surgical operations on the digestive tract are destined, not only to prolong life and palliate symptoms in case of incurable disease, but, in many instances, they will be the only means to afford permanent relief.

Extirpation of the Pharynx.—At the eighth meeting of the Society of German Surgeons, held in Berlin, B. v. Langenbeck† read an exhaustive paper on extirpation of the pharynx. He has seen five cases of cancer of the pharynx, upon three of which he operated. One of these cases proved fatal, twelve hours after the operation, from capillary hemorrhage during the operation, the remaining two died of pneumonia, respectively on the third and fourteenth day after the operation. He regards the operation as justifiable when we shall have learned how to prevent the secondary pneumonia, which was the cause of death in two of his cases. He performs the operation by making an incision from the lower border of the inferior maxillary bone half way between the symphysis and angle over the greater horn of the hyoid bone. The incision is carried

* Archiv f. Klin. Chirurgie, Band xxiv, s. 122.
† Berliner Klin. Wochenschrift, 1879, No. 17.

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downward along the anterior border of the sterno-cleido-mastoid muscle, down to a level with the tracheotomy wound previously made for the purpose of applying Trendelenburg's canula. The tissues are divided carefully, layer after layer, until the pharynx is reached, when its lateral wall is incised. The larynx is now rotated on its axis, so that its posterior surface with the anterior surface of the pharynx presents anteriorly, when separation is readily accomplished. Billroth reports a case where he extirpated the entire pharynx, a part of the cervical portion of the œsophagus, the larynx, and thyroid gland, and yet the patient recovered from the effects of the operation, but died subsequently from pericarditis produced by attempting to dilate the contracted œsophagus, the bougie passing through a false passage into the anterior mediastinum. Koenig believes that the pneumonia, which is so apt to follow these operations, is not so much the result of entrance of food into the bronchial tubes as the ingress of decomposed products of the wound, and recommends a low position of the head as a preventive measure. For the purpose of preventing the introduction of food into the bronchial tubes during deglutition, Thiersch advises the formation of a gastric fistula to precede the extirpation of the pharynx. Casselli* extirpated the pharynx, larynx, base of tongue, soft palate, and tonsils, in a woman nineteen years of age. The operation was performed largely with the galvano-caustic knife; only three ligatures were necessary. The patient recovered and was able to take food by means of a bougie in sufficient quantity, and wore an artificial larynx with comfort and benefit. Kocher† reports five cases of extirpation of the pharynx. As a direct result of the operation, one patient died on the fifth day of broncho-pneumonia; another, forty-two days after the operation from the same disease, with pleuritis. Besides the latter case, relapse occurred in three others—twice immediately after operation, in the third, somewhat later, death taking place two years subsequently from slow inanition. Only one case seems to have been radically cured; he has until the present, three years since the last operation, remained perfectly healthy, being able to make himself understood without difficulty, and to swallow all sorts of food without discomfort or pain.

Partial Excision of the Stomach.—The experiments of Winiwarter on animals have proved that life can be sustained after the entire stomach has been removed.

Merrem suggested the propriety of extirpation of carcinomatous pylorus in man, in 1810. Pean performed the first operation of this kind in 1879.‡ The cancer (scirrhus) was located in the pylorus, a section of which, with a portion of the omentum, was removed. The resected ends were united with catgut sutures. Although the patient's strength was sustained with rectal injections, and, when prostration became imminent,

* Berliner Klin. Wochenschrift, 1875, No. 33.

† Deutsche Zeitschrift fuer Chirurgie, Band xiii.

‡ Pacific Med. and Surg. Journal, Jan., 1880.

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with transfusion of blood on two different occasions, yet he never rallied completety, and died on the fourth day. No post-mortem examination was made. The operator attributed the fatal termination to imperfect suturing, and would, in a second case, give Czerny's silk preference to catgut as a suturing material.

It was left for Billroth* to record the first successful case of extirpation of the pylorus in man. The operation was performed Jan. 29, 1881. The patient was a woman forty-three years of age, who had suffered from symptoms of cancer of the stomach and stenosis of the pylorus for more than a year. The tumor was movable and well defined. As a preliminary measure the stomach was washed out with an ordinary rubber tube. The patient being under the influence of chloroform, and the temperature of the room at 86° F., an incision eight centimetres in length was made over the tumor. The tumor proved to be a nodulated carcinoma of the pylorus, which was infiltrated, and occupied more than the lower third of the stomach. The tumor was carefully separated from the surrounding parts, and all bleeding immediately arrested. The section through the stomach and duodenum was made about one centimetre from the indurated margin, and the resected ends carefully and securely adapted by about fifty silk sutures. The patient recovered from the operation without untoward symptoms, and was soon able to take liquid nourishment, and remains well at the time of writing this report. He has since performed the same operation twice, but in both instances the patients died soon after the operation.

Enterorrhaphy.—Enterorrhaphy is now frequently resorted to, either for the purpose of removing a limited portion of a diseased intestine, no longer capable of performing its functions, or to remove an unnatural communication of the intestines with the skin or some internal organ. November 6, 1878, Billroth† performed the operation on a young woman who had suffered for a long time from a fæcal fistula, with extensive destruction of the surrounding parts, the consequence of an incarcerated femoral hernia. The operation became urgent, because the upper end of the ulcerated intestine became contracted to such a degree as to give rise to intestinal obstruction. After a long and patient search both ends of the intestine were found and carefully separated from the surrounding firm adhesions. They were then drawn forward and the margins cut off evenly. It was found that the caliber of the upper end considerably exceeded that of the lower, and could, therefore, not be invaginated. To overcome this difficulty, Billroth made a longitudinal fold sufficiently large so that the lumen corresponded with that of the opposite end. This fold was kept in place by a number of fine sutures, which embraced the peritoneum and muscular layer. The upper end was then invaginated into the lower and united with sutures. The abscess cavity,

* Wiener Med. Wochenschrift, Feb. 5, 1881.

† Wiener Med. Zeitschrift.

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which existed in the pelvis, was thoroughly disinfected with a thymol solution and drained. The patient recovered completely.

Dittel operated on a fæcal fistula of four years' standing, the result of a strangulated hernia. He included the fistula in two semilunar incisions, and entered the peritoneal cavity, separated the adhesions, brought out both ends of the bowel, vivified the margins, and united the two ends. The wound was closed and treated antiseptically. The patient recovered without any symptoms of peritonitis. Billroth operated on a similar case in the same manner and with the same satisfactory issue. Albert, of Innsbruck, reports two cases of fæcal fistula, after strangulated hernia, both of which were cured by enterorrhaphy. Schede reports three cases, two of which recovered and one died. In the fatal case twelve centimetres of the intestine was resected; peritonitis was the cause of death. After finding and isolating the two ends of the bowel, he applies a temporary catgut ligature on each side, to prevent the escape of intestinal contents. After the ends have been resected, he unites them with Lembert's suture. He advises to leave the intestinal loop outside of the wound until the two ends have become united. Kuester performed resection of the intestine three times, twice for gangrene in cases of strangulated hernia, and once for invagination. In all of them the result was fatal.* He believes that, in recent cases, the sutures do not hold, and regards chronic cases of fæcal fistula more favorable for an operation. In one of Luecke's cases of resection of a gangrenous loop of intestine (strangulated inguinal hernia), notwithstanding the great care which was exercised, to determine which was the upper and which was the lower end, it was found at the post-mortem examination that a mistake had been made,—the lower end was found invaginated into the upper. At the point of invagination the lumen of the intestine was so narrow that the end of the little finger could barely be inserted. The undue contraction was due to inversion of the free extremity of the lower end of the bowel, caused by the passage of fæcal matter.

Dr. A. Ludvik reports an unusually interesting case of resection of a gangrenous loop of intestine.† The patient, a woman sixty years of age, had been suffering from a femoral hernia on right side for several years. Symptoms of acute strangulation had existed four days before she came under the observation of the reporter. She presented the following symptoms: the tumor was œdematous, skin red and firmly adherent to deep structures, abdomen tympanitic, convolutions of intestines prominent, frequent eructations and vomiting, ejections stercoraceous, profuse clammy perspiration, eyes dull, pulse intermittent. Operation made under spray. Incision through skin and superficial fascia gavé exit to a sanious offensive fluid. The intestinal loop—a portion of the ilium, ten centimetres in length,—presented all the appearances of gangrene, the omentum covering it had a yellow, dirty appearance,

* Berliner Klin. Wochenschrift, 1879. No. xx.

† Wiener Med. Presse, 1880, No. 23.

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and was traversed by vessels of dark violet color. The crural canal was dilated and the intestine with the mesentery drawn downward. The bowel was compressed above the point of strangulation, and the gangrenous portion removed by an incision through the healthy tissues, above the point of constriction. The vessels of the mesentery were secured with catgut ligatures. The margin of the distal and of the gut was inverted, and the upper end invaginated into it, and, after thorough cleansing with a three-per-cent. solution of carbolic acid, the parts were retained in accurate apposition with twenty interrupted sutures of fine catgut. The mesentery was secured to the concave side of the gut by means of three interrupted sutures. The prolapsed omentum was ligated and removed, and the gangrenous sac and cellular tissue excised with scissors. The intestine was returned into the abdominal cavity and the wound closed with silver-wire sutures, and three drainage tubes were introduced. The urgent symptoms disappeared promptly, the bowels moved spontaneously soon after the operation, and the patient recovered rapidly without any signs of peritonitis. Baum* made an attempt to resect a portion of the large intestine for malignant disease. The patient, a man aged thirty-four, had been suffering for some time from symptoms of obstruction. For the purpose of ascertaining the nature of the obstruction and to afford relief, enterotomy was performed in the right inguinal region, and, as the cœcum could not be found, the ilium was opened. The severe tympanitis subsided and the general condition of the patient improved. A cylindrical swelling in the right hypochondrium could now be well defined, which evidently involved the colon. Five weeks after the enterotomy, the morbid growth, and with it eight centimetres of the entire circumference of the colon ascendens, and a corresponding wedge-shaped piece of the meso-colon, was excised. The two ends of the resected bowel were united by means of figure 8 silk sutures, as advised by Gussenbauer. The intestine was replaced into the abdominal cavity, the wound closed, and a Lister dressing applied. On the seventh day symptoms of collapse supervened, followed by death on the ninth day. At the post-mortem examination it was found that only a part of the intestinal wound had united, the remaining sutures had given way, and the edges were gaping widely.

Excision of the Rectum.— Excision of the rectum may now be considered among the permanently established operations. Death, as the direct result of the operation, is of no more frequent occurence than after many other operations, while the relief obtained by it, and the permanent results secured by it, compare favorably with almost any other operation for malignant disease. The operation should be performed as soon as a diagnosis can be made, and the incisions carried through healthy tissue at a safe distance from the infected district. I think experience has demonstrated the fact, that suturing in these cases is worse than useless. The wound should be treated antiseptically and permitted to close by granulation.

* Centralblatt fuer Chirurgie, 1879, No. 11.

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It is evident, from the cases above reported, that resection of intestine, with subsequent invagination and suturing, is indicated in all cases where, during an operation for strangulated hernia, a considerable part, or the entire loop, has become gangrenous. It is also a justifiable operation for the removal of an anus præternaturalis if simpler means have failed to correct this loathsome condition. As a suture material, Czerny's silk deserves preference, as fine catgut might not be sufficiently reliable to maintain the parts in apposition until repair has taken place. In some cases it may be advisable not to return the intestine into the abdominal cavity until union between the resected ends has taken place. This is more especially the case if the tissues are in such a condition that their vitality and capability for repair are doubtful.

RADICAL CURE OF HERNIA.

The introduction of antiseptic surgery has rendered the operation for radical cure of hernia almost devoid of danger, and it has modified the procedure in such a manner that it will be more likely to yield permanent results. Czerny,* of Heidelberg, one of the most enthusiastic and ingenious advocates of antiseptic surgery, has recently devised a new operation for the radical cure of hernia. It is based on strict antiseptic principles, and its performance is justifiable only in case these principles are thoroughly applied. After carefully exposing the sac by an incision extending from the external abdominal ring to the base of the tumor, the hernia is reduced, and the neck of the sac, carefully isolated from the surrounding structures, is ligated with a strong carbolized catgut ligature, and the fundus cut off below the point of ligature; the stump is pushed upward within the abdominal cavity, and the empty sac dissected out and removed. The next step of the operation consists in dissecting out and uniting the columns of the external ring with a continuous catgut suture. A drainage-tube is placed along the floor of the wound, the margins of the wound approximated with sutures, and a Lister dressing applied. Of five cases operated upon by Czerny, the patients recovered without any unfavorable symptoms, and remained free from any relapse at the time of his report. Socin,† of Basel, has performed this operation upon seventeen cases, the result being permanent in all but one. Dr. Lee, of Chicago, and Wm. McCormac, each reports a successful case. Prof. Bryk,‡ of Krakau, performed Czerny's operation four times, three times for inguinal, and once for crural hernia. In one of these cases reduction was accomplished, while in the remaining cases the operation followed acute incarceration. In one case death followed in two and a-half hours after the operation, the symptoms preceding it indicating carbolic acid intoxication. Circumscribed pelvic peritonitis on the side operated upon followed the operation in all of the successful cases, and, in one instance,

* Berl. Klinische Wochenschrift, 1879, No. 23.
† Langenbeck's Archiv. f. Klin. Chirurgie, Band xxiv.
‡ Wiener Med. Wochenschrift. 1879, No. 36.

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terminated in perityphlitic suppuration. In this last case the suppuration was undoubtedly due to an incision made into the strangulated cœcum for the purpose of rendering reduction possible. The wound was united with sutures, but may have been the source of escape of some of the contents of the intestine. The pus discharged itself into the bowel, after which recovery took place rapidly. Only in one case was the patient under observation for a sufficient length of time to ascertain whether or not a relapse had taken place. In this instance the examination was made eight months after the patient had left the hospital, when a firm cicatrix was found at the site of the operation, sufficiently firm to prevent a descent of the hernia. Mr. John Wood* operated on a large number of cases for radical cure of hernia under the antiseptic spray, without having observed any serious consequences. He extirpates the entire hernial sac, including sometimes the adherent omentum. The peritoneal opening is closed with a continuous catgut suture, and the columns of the inguinal ring are approximated with thick silver-wire sutures to prevent descent of the hernial protrusion. The wound is drained, sutured, and an antiseptic dressing applied.

In several of the cases mentioned above, the process was interrupted by the formation of an abscess near the external abdominal ring. In case the hernia is irreducible, the sac should be opened and its contents carefully separated from its interior surface, great caution being necessary to arrest hemorrhage completely with fine catgut ligatures, or by torsion of the vessels.

In an address delivered before the International Medical Congress, in Amsterdam, Prof. W. P. Tilanus† concludes his remarks on this subject, as follows: "1, very favorable results have been obtained by the radical treatment of hernia, viz., ligature of the neck of the sac, extirpation of the sac, suture of the opening with antiseptic precautions. The treatment is not dangerous, and has in most cases given good results. 2, operation for hernia is indicated only in cases where the hernia cannot be kept *in situ* by a truss."

Czerny's operation should follow all operations for strangulated hernia, as it does not increase the danger, provided it is done with antiseptic precautions; at the same time it offers a favorable prospect for a permanent removal of the disability; in all other cases it is destined to be limited to severe cases, which are not amenable to the application of a truss.

It is safe to assume that in Bryk's cases the operations were not performed with strict antiseptic precautions, or the subsequent treatment was defective in the same sense, as such extensive inflammations are very rare when all the minutiæ of the Lister treatment are carried into effect. As Czerny's antiseptic silk has answered such an admirable purpose in a variety of antiseptic operations, it would undoubtedly be a decided

* McCormac, Antiseptic Surgery, p. 74.

† British Medical Journal, September 20, 1879.

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advantage to substitute it for catgut in tying the neck of the sac and suturing the pillars of the ring.

OPERATIVE TREATMENT OF ECHINOCOCCUS CYSTS OF THE LIVER.

Echinococcus cysts of the liver, and other abdominal organs, have until recently been regarded as very serious affections, proving, only too frequently, fatal from rupture of the cysts, and escape of their contents into the peritoneal cavity—accidents usually productive of fatal peritonitis. Antiseptic surgery has at last rendered these parasitic growths accessible to the knife of the surgeon without exposing the patient to the danger of peritonitis. The object of the surgical treatment consists in securing adhesion between the cyst wall and peritoneum under antiseptic precautions, and subsequently emptying the cyst by incision and drainage. Dr. Israel,* of Berlin, has been successful in removing an echinococcus cyst from the convex surface of the liver by three successive operations. As the tumor was located on the upper surface of the liver, its removal through an abdominal incision was impossible, he approached it from above. Under the spray an incision was made over the sixth rib, and parallel with it, and a portion of this bone excised and the pleura underneath it incised. The pleural wound was filled with antiseptic gauze, and a Lister dressing applied. The object of this operation was to secure adhesion of the parietal pleura, with the upper surface of the diaphragm. On the seventh day it was found that firm adhesion had taken place, and the second operation was performed, which consisted in making an incision through the diaphragm into the peritoneal cavity. The wound in the diaphragm was again tamponed with gauze, for the purpose of effecting adhesion between the lower surface of the diaphragm and the upper surface of the liver. Nine days after the second operation this had been accomplished, and an incision was now made into the tumor and permanent drainage established by means of a silver tube, which reached from the interior of the cyst to the surface of the wound in the chest wall. Nine and a half weeks after the last operation recovery was complete; the patient having suffered at no time from pleuritis or peritonitis. During the progress of healing the fibrous sac lining the cyst exfoliated, and escaped through the wound.

Dr. Genzmer reported a very similar case, only that the operation was performed during one sitting, as the liver was found adherent to the diaphragm. The patient recovered in eighteen weeks.

Prof. Schoenborn reports two successful operations for echinococcus of the liver.† In the first case the cyst was exposed by an incision through the abdominal wall; the cyst was found adherent except at a very small point where it was united with the peritoneum by a few sutures. The cyst was then incised and drained. Six weeks subse-

* Berliner Klin. Wochenschrift, 1879, No. 17.

† Deutsche Zeitschr. f. Chirurgie, Band xiii, Heft 5 u. 6.

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quently only a very small fistula remained, through which small quantities of bile escaped. The second case concerned a man forty-five years of age, who suffered from a very large cyst which had existed for twelve years. It had been previously punctured, in consequence of which it inflamed and suppurated. It was incised and drained, and the patient recovered completely in five weeks.

Lindemann, of Hanover, in 1871, conceived the idea of completing the operation during one sitting. His operation has special reference to echinococcus cysts of the liver, but can be applied if the parasite is located in some other abdominal organ. Under the spray he exposes the cyst by an incision through the abdominal wall, and unites the parietal peritoneum with the skin on each side of the wound with catgut sutures. With a large curved needle he passes two stout catgut ligatures through the cyst from one angle of the wound to the other and parallel with its margins. The ligatures include the cyst wall and any tissue that may intervene between it and the visceral peritoneum. An assistant on each side makes traction on the ligature, and thus draws the cyst forward and brings its wall in close contact with the edges of the wound, which prevents the escape of the cyst contents into the peritoneal cavity. The operator punctures the cyst between the ligatures and dilates the opening sufficiently to enable him to empty the cyst; after which the edges of the wound in the cyst are accurately stitched to the abdominal wound, and free drainage established. Lindemann operated on seven cases by this method, of which six recovered and one died.

Dr. Landau,* of Berlin, reports an exceedingly interesting case where the cyst was located in the interior of the liver, and yet the patient recovered after the operation. At one angle of the wound it was necessary to incise the parenchyma of the liver to the depth of one centimetre, at the other one and a-half centimetres, before the cyst was reached. The parenchymatous hemorrhage was arrested by sutures, which united the edges of the wound in the liver and cyst with the abdominal wound. The large cavity, which contained one and one-half liter of cyst contents, healed by slight suppuration in less than two months.

GASTROTOMY.

Sedillot, in a communication to the Academie des Sciences, in Paris, in 1846, first suggested the idea of creating a permanent gastric fistula in cases of impermeable stricture of the œsophagus. He carried his suggestion into practice by operating on a case in 1849, and again on another in 1853; unfortunately, both cases terminated fatally. He was severely criticised by the profession and the public for his boldness, and the operation fell into disrepute until revived by Langenbeck under more favorable auspices.

B. v. Langenbeck* produced a gastric fistula in a man, aged fifty-

* Berliner Klin. Wochenschr., 1880, No. 7 u. 8.

* Wiener Med. Zeitschrift, 1879, No. 14.

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nine, who had suffered for seven months from an irremediable obstruction in the œsophagus. The operation was performed under the spray, and consisted in making an incision ten centimetres in length, beginning at a point two centimetres to the left of the xyphoid cartilage, and carried in an outward and downward direction; the anterior wall of the stomach was seized with forceps, drawn forward, and fixed in the wound by a long steel needle, which was passed through both edges of the wound and the prolapsed portion of the stomach; each margin of the wound was united to the anterior wall of the stomach by two silk, and numerous catgut sutures. Twenty-four hours after the operation the steel needle was removed, and four days later, firm union having taken place between the wound and the surface of the stomach, a small crucial incision was made through the exposed portion of the stomach, and the opening kept patent by a rubber drain, which also served as a medium for the introduction of food into the stomach. The patient recovered without any unfavorable symptoms.

Trendelenburg* reports a most remarkable case. He operated on a boy some three years ago, on account of an impermeable stricture of the œsophagus. He recovered from the operation without any untoward symptoms, and is now in the habit of masticating the food and swallowing it; as soon as it reaches the stricture he regurgitates it voluntarily, and transfers it from the mouth to a rubber bag, which communicates with the canula; thus the act of mastication and deglutition is performed, and the impression made on the nervous system by these acts favorably affects the remaining part of the digestive process.

Krœnlein† reports a similar operation performed on a man suffering from carcinomatous stenosis of the œsophagus. After the patient recovered from the operation, he suffered first from sensation of hunger, which was relieved as soon as more solid food was introduced. The distressing thirst from which he suffered was alleviated by chewing tobacco. The patient died ten weeks after the operation. The same author places great stress on making the fistula small.

Prof. Schoenborn‡ of Koenigsberg, has performed gastrotomy three times for cancer of the œsophagus. All cases terminated fatally a short time after the operation. In the first case, a man aged forty-eight years, the sutures, fourteen in number, cut through, and a destructive inflammation of the fascia around the wound took place. Subsequently two further attempts were made to draw the stomach towards the wound and fasten it with sutures; both efforts, however, were fruitless, and the patient died nine days after the last operation. A post-mortem examination revealed the existence of a circumscribed peritonitis, affecting the upper surface of the liver, posterior surface of stomach, and adjoining omentum. The second case died on the third day with symptoms of collapse.

* Berliner Klin. Wochenschrift, 1879, No. xviii.

† Berliner Klin. Wochenschrift, 1879.

‡ Deutsche Zeitschrift f. Chirurgie, Band xiii, Heft 5 u. 6.

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On post-mortem examination it was found that no adhesion had taken place between the stomach and the wound; in the place of it existed general suppurative, fibrinous peritonitis and phlegmonous inflammation of the abdominal parieties. In the third case, a man fifty-six years of age, the stomach was inflated before the operation by means of a stomach tube and rubber bulb, as advised by Schreiber, for the purpose of bringing the anterior surface of the stomach in contact with the abdominal wall. No needle was used for transfixing the stomach in the wound, but its anterior surface was sutured to the peritoneum and deep muscular layer but not to the skin. For two days the patient did well, when he was attacked with delirium tremens. The contents of the stomach at times escaped through the opening and irritated the wound. The patient died on the fourteenth day. The autopsy showed that the margins of the wound and stomach were firmly adherent, and that the circumscribed peritonitis was undoubtedly due to rupture of a cancerous nodula on the upper surface of the liver.

Skleffassowski* operated on a man, aged thirty-eight, suffering from complete cancerous obstruction of the œsophagus. He died after twenty hours, with symptoms of pneumonia.

Schede† performed gastrotomy in a case of stenosis of the pylorus with a view to dilate the stricture by passing dilating instruments through the gastric fistula and into the pylorus. The object was not realized, as the patient only lived a few days after the operation.

Of twenty-one cases of gastrotomy done for cancerous stenosis of the œsophagus, collected by Kroenlein, fourteen died within four days, four within fourteen days, one on the twenty-sixth day, one on the fortieth day, and only one survived three months after the operation, and in this case the sensation of thirst was distressing. With such statistics it is safe to predict that gastrotomy for cancerous disease of the œsophagus will soon be justly abandoned, and its performance will be restricted to those rare cases of benign irremediable strictures of the œsophagus, where it is destined to achieve results alike creditable to the surgeon and beneficial to the patient.

LAPARO-SPLENOTOMY.

This operation has for its object the removal of the spleen by abdominal section. Although the operation is of ancient date, it is not until recently that it has again been performed and placed on the list of legitimate operations in well selected cases. The first well authenticated operation of this sort was performed by Zaccarelli, of Palermo, in 1549, and proved successful. J. Pean, of Paris, performed the operation in 1867, and again in 1876; both cases recovered. Czerny's case, which proved successful, was a woman twenty-four years of age. It was supposed that she was suffering from a floating kidney, but on making the

* Medical News and Abstract, March, 1880; Medizinski Westnick, No. 25 and 28.
† Virchow u. Hirsch, Jahresbericht 1879, Seite 416.

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incision through the abdominal wall in the median line, the spleen presented itself. The vessels in the gastro-lineal omentum were ligated in five to six parts with antiseptic silk, the pedicle dropped into the abdominal cavity, and the wound closed. The red blood-corpuscles were first diminished, but were subsequently restored to their normal proportion. Czerny's and Pean's cases suffered from a peculiar nervousness, resembling hysteria, after the operation. In two cases of splenic leukæmia, where Czerny removed the enlarged organs, the proportion of the white and red corpuscles was 1.5 and 1.3. Both patients died soon after the operation.

Another successful case of excision of the spleen is reported by Ferrerius.

E. Martin, of Berlin, also reports a recovery after the removal of a wandering spleen.

Dr. M. Nedopil,* of Vienna, has collected twenty-three cases of this operation, of which number eighteen died and five recovered. In the unsuccessful cases death resulted within a few minutes to seven days after the operation from hemorrhage or septicæmia. The operation was performed for: 1, wandering spleen; 2, hypertrophy of the organ; 3, cysts or echinococcus of the spleen; 4, splenic leucocythæmia.

Experience has taught that the best results are obtained when the operation is performed for a displaced or wandering organ, while advanced splenic leucocythæmia offers little or no hope for success.

The best method of operation is a median incision through the linea alba, as practiced by Pean, ligation of the vessels *en masse*, with carbolized silk, and intra-abdominal treatment of the pedicle. The successful cases of excision of the spleen have at least taught us that this organ is not essential in the process of hæmato-genesis.

In this country, excision of the spleen has been performed by Prof. J. F. Miner,† Prof. C. L. Lane,‡ and Dr. G. L. Simmons.‖ The result was fatal in all cases; in the first case, death was due to exhaustion, and in the remaining two it was the result of hemorrhage during the operation.

NEPHRECTOMY AND NEPHROTOMY.

These terms were introduced by Heinike, the former to designate complete removal of a kidney; the latter operation consists of an incision made down to or into the kidney, for the purpose of removing impacted calculi or products of inflammation in the pelvis of the kidney.

At a meeting of the Royal Medical and Chirurgical Society, March 9, 1880, Mr. A. E. Barker§ read a valuable and interesting paper on "Nephrectomy by Abdominal Section." After giving Simon, of Heidelberg,

* Wiener Medicinische Zeitschrift, 1878, No. 9.
† Buffalo Med. Jour., May, 1879.
‡ Pacific Med. and Surg. Jour., Nov., 1877.
‖ Pacific Med. and Surg. Jour., Dec., 1877.
§ British Medical Journal, March 13, 1880.

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credit for having planned and first carried out the removal of an entire kidney, in 1869, he gave a statistic of twenty-eight cases of this operation which he had collected. "Two cases seemed to prove conclusively, that neither the incision to the kidney in the loin, nor the ligature of its pedicle, and its removal, need cause, necessarily, any great disturbance in the system. The organ in both had been wounded by a stab with a knife, and prolapsed, and was removed easily and without any immediate or remote ill effect. Of the twenty-eight attempted nephrectomies, six were done on a wrong diagnosis; in two, for neoplasms, the operation was left uncompleted, owing to difficulties experienced in the isolation of the organ. Of the remaining twenty, undertaken with the distinct object of removing the kidney, and completed, the objects were the following: two for fistula of the ureter, both successful; two for acute pain in the kidney (cause unknown), one death, one recovery; two for calculous pyelitis, both fatal; three for injury of the organ, two complete recoveries, one fatal; six for acutely painful movable kidney, four complete recoveries, two deaths; four for neoplasms (one obscure, however), one death, three recoveries; finally, one for pyonephrosis, perfectly successful. In the whole twenty-eight cases, there were fourteen recoveries and fourteen deaths. Excluding the six for wrong diagnosis, there were thirteen successful, and nine fatal; two of the latter, however, were desperate, and left uncompleted. The causes of death were: peritonitis in four (abdominal section in all); pyæmia in one; in one the cause was not given, the patient died sixty-four hours after operation; in one, the cause was unexplained by the necropsy, "the patient died within a week"; two, both desperate cases, died of shock, ten hours after the operation. In all successful cases, recovery was complete, possible recurrence in two being excepted. Of the thirteen recoveries, nine were lumbar sections, and four ventral. Of the nine fatal cases, five were lumbar sections, and four ventral."

Prof. Zweifel, of Erlangen, successfully removed a kidney from a patient suffering from an uretero-uterine fistula, the result of an injury sustained by the use of forceps during the delivery of a child through a contracted pelvis.* The kidney was extirpated by the extra-peritoneal method. An incision was made from the eleventh rib to very near the crest of the ilium, and the deep dissection continued along the outer margin of the erector spinæ, and outside the quadratus lumborum muscles. The enucleation of the kidney was found difficult, through want of sufficient room for the hand, but was finally accomplished with the aid of a Nelaton's forceps. The ureter and the renal vessels were tied separately with carbolized silk ligatures, and the pedicle cut close to the kidney, so as to prevent slipping of the ligatures. The wound was united, except at the lower part, where a space was left open for the ligatures. The operation was performed under the spray, and the wound dressed

*American Journal of Medical Sciences, Jan., 1880.

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antiseptically. The patient made a rapid recovery, and suffered no inconvenience from the loss of such an important organ.

In our own country this operation has been performed by that talented and bold surgeon, Dr. F. Lange,* of New York. A woman forty-seven years of age, had been suffering for three years from pain in the right lumbar region, with frequent exacerbations, attended by nausea and vomiting. These attacks increased in frequency and severity, and were accompanied by irritability of the bladder. A microscopical examination of the urine showed the presence of pus, numerous epithelial cells from bladder and kidneys, the cells from the pelvis of the kidney being less copious. On examination of right lumbar region, a tumor, the size of a child's head, was found imparting a doubtful, obscure sensation of fluctuation. It was oblong in shape, with an irregular surface, and occupied the space between the false ribs and crista ilei. It was evident that the tumor originated from the right kidney, and that, in all probability, the case was one of pyonephrosis. There were no symptoms which indicated disease of the left kidney, hence, further examination was deemed superfluous. During the progress of the case the urine became all at once clear, and it was supposed that for the time being the right ureter had become obstructed, and that the normal urine came from the left kidney. The tumor was removed and was found to consist of a hypertrophied portion of the upper part of the kidney, the remaining part of the organ having undergone extensive cystic degeneration. The cysts contained urine and pus. Ureter very much contracted at a point where it leaves the pelvis of the kidney. The patient died eighty-four hours after the operation, not a drop of urine having entered the bladder during this time. A post-mortem examination revealed the fact that the secretory portion of the left kidney had been completely destroyed. The physiological function had been performed by the hypertrophied portion of the kidney which had been extirpated.

E. H. May has succeeded in removing a renal calculous by an operation in the lumbar region.† The patient was a woman fifty-five years old, who had become debilitated to such an extent that she could no longer attend to her household duties. In the right lumbar region, between the false ribs and the crest of the ilium, a tumor was detected, which was diagnosed as a suppurating kidney. This view was supported by the fact that after the examination of the tumor, the urine contained pus. Further observation revealed that the urine contained from time to time pus and blood, but no albumen. Four trocars were introduced through the lumbar region, after Simon's method, and seven days subsequently an incision was made which gave exit to fœtid pus. A renal calculus, which was detected through the incision, could not be removed. Three weeks subsequently a 1.3 ounce uric acid calculous was extracted through the wound. A slight peritonitis succeeded the operation, followed, in succession, by pneumonia,

* New York Medical Record, Vol. xiii, No. 6.

† London Lancet, 1880, vol. ii, p. 6.

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nephritis, and death on the thirty-first day after the removal of the calculus. At the post-mortem examination it was found that the normal tissue of the left kidney was completely destroyed.

Dr. Petersen,* of Elberfeld, in a case of pyonephrosis and renal calculi, after having ascertained the presence of pus by aspiration, established a direct route into the pelvis of the kidney, by pushing a trocar into it, and allowing the canula to remain for five days. The operation was performed antiseptically, and a Lister dressing applied. After having thus established a permanent opening, he enlarged the track by means of laminaria tents, until he could easily introduce the index finger. A large amount of pus escaped, and, by introducing the finger, a number of calculi could be distinctly felt. These were removed with a polypus forceps during two sittings, and the wound was kept open with drainage tubes. The general health of the patient soon began to improve, and was almost completely restored at the time of the report, one and one-half years after the operation. A small fistulous track continued to discharge a scanty amount of pus.

The time has come when antiseptic surgery will claim the kidney as a legitimate field for surgical interference, and thus save many a patient from an untimely grave, and alleviate suffering of the most excruciating character, which has heretofore baffled the skill of the physician and surgeon.

EMPYÆMA.

Kashimura,† assistant in the Shitago Hospital, Tokio, Japan, describes an ingenius method for removing pus from the pleural cavity and irrigating the cavity with antiseptic solutions. The procedure is recommended as a substitute for incision in cases where no air has entered the cavity of the chest, and the purulent collection has not undergone putrefaction. The advantages claimed for removing the pus by puncture and subsequent antiseptic irrigation over incision are: the lung is not exposed to atmospheric pressure, and is, consequently, more likely to expand after removal of the effusion, and the chest does not contract. The instrument consists of a trocar, with stop-cock and two lateral tubes, to which are attached rubber tubes provided with clamps. The rubber tubes are filled with warm thymol water 1.1000, and the clamps fastened to retain the fluid. After the trocar has been introduced into the chest, one of the rubber tubes is immersed in thymol water, while the other is brought in connection with a graduated irrigator containing thymol water. The clamp of the efferent tube is now removed, the stop-cock turned, and the contents of the chest escapes. After 500 to 1000 centimetres of pus have escaped, the flow is arrested by reapplying the clamp. The clamp of the supply tube is next removed, and the thymol solution enters the chest until the cavity is filled to its former dimensions,

* Berliner Klin. Wochenschrift, 1880, No. 14.

† Berliner Klin. Wochenschrift, Jan. 19, 1880.

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when the fluid is withdrawn as before; and these manipulations are repeated until the fluid escapes perfectly clear, when the canula is removed and the puncture closed with a strip of adhesive plaster. Should reaccumulation take place, the operation is repeated. He reports three cases permanently cured by this operation; in two cases one operation sufficed, while in the third case a repetition was made necessary by a reaccumulation of the purulent collection. In the absence of a trocar, as described, the operation can be performed with an aspirator. In a case of simple empyæma in a woman forty years of age, I removed the fluid by means of the aspirator, and subsequently washed out the pleural cavity with a one-per-cent. solution of carbolic acid, until the fluid returned perfectly clear. The patient recovered completely, without any contraction of the chest. The aspirator will prove itself superior to the trocar in case adhesions exist, as it will assist in expanding the compressed lung.

EXTIRPATION OF LARYNX.

In 1829, Albers, of Bonn, for the first time conceived the idea of removing the larynx, and performed the operation on dogs. In 1870, Czerny, after having made numerous experiments on animals, came to the conclusion that the larynx of man could be successfully extirpated. He published a method for the operation, but it was left for his distinguished teacher, Billroth, to perform the first operation on man, three years subsequently. The patient was suffering from cancer of the larynx. He recovered from the effects of the operation, and was able to speak with the aid of an artificial larynx. The patient died one year after the operation, from recurrence of the disease. Of the cases referred to by Max Schueller,* three were suffering from sarcoma of the larynx, all of whom recovered and remained well at the time of the report; fifteen were cases of cancer of the larynx; of this number only two were living and free from a recurrence at the time of writing; five died of pneumonia shortly after the operation, while the remaining cases died from a recurrence of the disease in the glands of the neck.

The first operation of this kind in this country was performed by Dr. F. Lange, of New York, Oct. 12, 1879. The patient, a man seventy-four years of age, was the subject of a sarcomatous tumor of the larynx, which gave rise to great embarassment in breathing. The entire larynx, right wing of hyoid bone, epiglottis, and a portion of the anterior wall of the œsophagus, were removed. The patient recovered completely from the operation.

Dr. Gerster, of New York, has removed successfully one-half of the larynx for malignant disease.

If this operation is limited to well-selected cases, it will prove to be a valuable accession to the resources of the surgeon, and will permanently occupy a well-deserved place in operative surgery.

* Tracheotomie, Laryngotomie, u. Extirpation des Larynx, Stuttgart, F. Enke, 1880.

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TRANSFUSION.

In an exhaustive paper on transfusion, Dr. H. Hæhner* comes to the conclusion that transfusion of blood is capable of stimulating circulation and nutrition for a short time, and that it should be resorted to in cases of dangerous hemorrhage and anæmia, resulting from curable affections, when it becomes necessary to gain time with the operation until more radical methods of treatment can be instituted; it is contra-indicated when the anæmia is the result of an incurable affection, as phthisis, or cancer, as the risks incident to the operation more than counterbalance a possible transient benefit. Transfusion of milk, although evidences of embolism following it are not as yet established, is attended by the same grave symptoms as transfusion of blood, and is often followed by albuminuria. It is also a potent stimulant, and is indicated in the same class of cases as blood-transfusion, but, as it is frequently attended by grave symptoms, it should be employed only after all other methods of treatment have been exhausted. In pernicious anæmia it may hasten the fatal termination.

The well-known capacity of the peritoneum to absorb substances brought in contact with its surface, has led Dr. Ponfick† to select the peritoneal cavity for transfusing blood. He made numerous experiments on dogs, which satisfied him that blood, especially when previously defibrinated, is injected into the peritoneal cavity, is readily absorbed, and does not occasion hæma globinurea. Very little local irritation followed the injection of defibrinated blood. In three patients, where he performed peritoneal transfusion, the result was favorable, only slight reaction and very little tenderness followed the procedure. The apparatus with which the transfusion is made, consists of a piece of india rubber tube, to one end of which is connected a glass funnel, and to the other a sharp pen-pointed canula, which can be opened and closed by a stop-cock. After the tube is filled with defibrinated blood, heated to body heat, the point of the canula is pushed through the abdominal wall, and when it has reached the peritoneal cavity, the blood is poured into the funnel, and after a sufficient amount has been transfused, the stop-cock is turned and the canula removed. The quantity of blood thus transfused varied from 240 to 350 grammes. Bizzozero and Golgi have since repeated the experiments of Ponfick, and confirm his statements. It is their opinion that blood corpuscles enter the blood-vessels through the peritoneum, inasmuch as a considerable increase of the percentage of blood corpuscles could be recognized as early as twenty minutes after the transfusion. The process of absorption is most active during the first two days, but the increase of hæmaglobin continued for more than a week. The last mentioned observers also ascertained, that although the increase of hæmaglobin is witnessed, if the experiment is made on healthy

* Schmidt's Jahrb., 1880, No. 7 und 8.

† Medical News and Abstract, March, 1880.

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animals, it is more marked and rapid in animals rendered anæmic by venesection.

Should further clinical experience prove the fact that blood corpuscles injected into the peritoneal cavity, enter the blood-vessels direct and entire, retaining at the same time their physiological function, this new method of transfusion may become a valuable therapeutical measure in cases of anæmia, caused by wasting diseases or slow loss of blood; but it never can take the place of direct intra venous transfusion in cases of acute anæmia, as the time required for absorption would be too long to relieve the urgent symptoms.

AMPUTATION AND EXCISION.

V. v. Bruns' Method of Amputation.—V. v. Bruns* has described a new method of amputation, which has been very generally adopted by European surgeons. A large anterior flap, consisting of skin and superficial fascia is made, the base of which must be a little wider than one-half of the circumference of the limb, and its length must correspond with at least two-thirds of the circumference of the limb. The extremity of the flap may be semi-circular or nearly square, to adapt itself to the shape of the circular wound below. After the flap has been raised and reflected, the remaining soft tissues are severed by a circular incision. The next step of the operation consists in separating the periosteum for a distance of three to four centimetres. After the bone has been divided with a saw, and its sharp margins well rounded off, its surface is completely covered by the periosteal cylinder. After the bleeding has been, carefully and completely arrested by the use of catgut ligatures, the flap is laid over the wound and its edges accurately sutured to the circular wound. One or two drainage tubes are introduced at the lower margin of the wound, and allowed to remain for two or three days. The most difficult part of the operation must be the preservation of the periosteum in a tubular form, as described by the author.

Prof. Prodrazky† has called attention to this fact, and has substituted for the tubular periosteal flap, an anterior one which covers the bone end completely, and which, according to his experience, fulfills the same indications. The advantages claimed for Bruns' method of amputation are:‡ 1, that the flap is not likely to become gangrenous, and is retained *in situ* by its own weight; 2, free drainage; 3, a good, useful stump.

Since 1875, Bruns has amputated the thigh thirty-nine times by this method, with only three deaths.

Amputation at the Hipjoint—Mr. Richard Davy,‖ surgeon to the Westminster Hospital, has contributed a valuable means to prevent

* Die Amputation der Gliedmassen durch Zirkelschnitt mit vorderen Hautlappen, Tuebingen, 1879.

† Wiener Med. Zeitschrift, 1879, No. 51.

‡ Deutsche Zeitschrift f. Chirurgie, Band xii, Heft 6.

‖ British Medical Journal, Nov. 1, 1879.

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hemorrhage during hipjoint amputation. As the anterior flap in this operation is supplied with blood from the external iliac artery, and the posterior from the internal iliac, he has devised a method by which the common iliac can be compressed through the rectum, thus rendering the amputation almost bloodless—a great desideratum, when we recollect that in almost all cases requiring this grave alternative, any considerable loss of blood would prove a great source of danger. The instrument used for compression consists of a smooth, polished lever, turned out of ebony, its ends rounded off, much like the finger tips. It is eighteen to twenty-two inches in length, with a diameter of five-eighths to three-eighths of an inch. The rectal end is graduated to an inch scale, so that the surgeon, in using it, can easily ascertain the location of its tip. The lever is introduced into the rectum the requisite distance, and the artery compressed against the psoas magnus muscle and the bodies of the lumbar vertebra, using the sacral margin of the true pelvic brim as a point for counter-pressure. Davy reports ten cases of amputation at the hipjoint, where this safeguard against hemorrhage was used, the minimum loss of blood being three-fourths of an ounce, and the maximum quantity being three ounces, or sixteen and three-fourths ounces for all the cases.

Excision of Hipjoint.—Prof. Luecke,* of Strassburg, has introduced a new method for excising the head of the femur, in disease of the hipjoint requiring this operation. He approaches the joint anteriorly, by making an incision external to the crural nerve, along the inner margin of the sartorius rectus femoris muscles. The loose cellular tissue on the outer margin of the ilio-psoas is reached without any difficulty. By slightly flexing the thigh, adducting and rotating it outward, the muscles are held apart, and the capsule of the joint is reached. After dividing the neck of the femur with the bone-forceps or chisel, the head of the bone is removed. In case the head of the bone and acetabulum have become much softened by the morbid process, the diseased tissues can easily be removed to the requisite extent with a sharp spoon, devised for the purpose. The circumflexa externa of the arteria profunda femoris, in case it takes a high origin, and the arteria circumflexa externa may be endangered by the operation, and should in all cases be carefully looked for and avoided. Through this incision the head, neck, and even portions of the trochanter major, can be removed. The great advantage of this operation consists in preserving all of the muscular attachments, and, in most instances, the greater portion of the capsular ligament. During my visit in Strassburg, Prof. Luecke showed me a number of cases operated upon by this method, the result in most of them being excellent, the functions of the joint and limb being preserved in a remarkable degree.

* Kummer, Inaugural Dissertation, Strassburg.

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SUBCUTANEOUS OSTEOTOMY.

In 1784, Hunter announced that subcutaneous wounds and injuries, not communicating with the atmospheric air, are seldom followed by inflammation, but undergo rapid repair without the formation of pus. This great discovery was soon applied in practice, and subcutaneous tenotomy, through the enthusiastic labors and teachings of Delpech, Stromeyer, M. Jules Guerin, and Dieffenbach, became a well-established operation in surgery.

During the Schleswig-Holstein war, Prof. Langenbeck applied the same principle in the treatment of compound fractures, caused by gunshot wounds, by introducing a small straight saw through the bullet wound, and sawing off and removing the sharp projections of the fragments without enlarging the wound. During the winter of 1854, Langenbeck resorted to subcutaneous section of bone for the purpose of correcting the deformity, in cases of angular anchylosis of the hip and knee. Through a very small incision, penetrating the skin and soft tissues to the bone, he introduced a drill a quarter of an inch in diameter, and, having made a sufficient number of perforations, fractured the bone, and dressed the limb in a straight position. Modifications of this operation were introduced in rapid succession by Meyer and Wernher in Germany, Brainard, Pancoast, and Gross in America, and Mr. L. Stromeyer Little, of England. During the last few years quite a number of new operations have been devised, all of which have a common object—to divide the bone without causing a compound fracture.

Mr. Wm. Adams* performed, for the first time, his operation of subcutaneous division of the neck of the femur, December 1, 1869, on a man twenty-four years of age, suffering from anchylosis of the hipjoint—the leg being flexed at a right angle and abducted. He describes the instruments and operation as follows: "The instruments used were a long tenotomy knife, and a very small saw, three-eights of an inch in width and with a cutting edge an inch and a half in length. I entered the tenotomy knife a little above the top of the great trochanter, and, carrying it straight down to the neck of the femur, divided the muscles and opened the capsular ligament freely. Withdrawing the knife, I carried the small saw along the track made—preserving this by pressure of the fingers—straight down to the bone, and then across the anterior surface of the neck, the flat side, and not the edge, of the saw being applied to the bone, as it was gently carried along its anterior surface; the edge of the saw was now turned upon the bone, and, by a very wriggling sawing movement, the section of the bone was accomplished in five minutes. No hemorrhage followed, and I immediately applied a compress of dry lint, retained in position by strips of adhesive plaster and a bandage." The leg was dressed in a straight position, and, although the establishment of

* Subcutaneous Division of the Neck of the Thighbone for Anchylosis at the Hipjoint. Transactions of the International Medical Congress, 1876.

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a false joint did not succeed, the patient recovered rapidly, with an anchylosed but straight and useful limb.

In the same paper he gives an account of twenty-four similar cases operated upon by this method, of which number one died of pyæmia, and one of chronic suppuration, followed by albuminuria and phthisis. The most favorable cases for this operation are those where anchylosis has been the result of rheumatic arthritis, or suppurative synovitis without destruction of the head of the thighbone.

Mr. Frederick J. Gant, in 1872, devised an operation which he terms the infra-trochanteric operation of osteotomy, for a similar class of cases. The instruments used are a stout tenotomy knife and a fine saw. With the latter the femur is divided subcutaneously just below the trochanter minor. The object of this operation is to obtain bony union in a straight position, and it is preferable to Adam's operation in all cases of anchylosis of the hip-joint and angular deformity where the neck of the femur has been materially shortened by destructive ostitis.

In 1875, the late Mr. Maunder, modified Gant's operation in substituting Volkmann's chisel for the saw in making the osseous incision. Subcutaneous osteotomy with the saw or chisel, as described above, may be performed in a similar manner, and with the same beneficial results, in cases of angular deformity in the continuity of the long bones, caused by vicious union after fractures, or acquired by disease of the bones.

Several methods of subcutaneous osteotomy have been described for correcting the unsightly deformity caused by genu valgum. As this deformity depends, in most instances, on an abnormal plane of the lower articular surface of the femur, caused either by an elongation of the inner condyle of the femur, or a deviation in the direction of the shaft of the femur or tibia, or both — the osseous division varies according to the pathological views of the operator.

Dr. Ogston, of Aberdeen, who attributes the alteration of the plane of the lower epiphysis of the femur solely to a hypertrophy of the inner condyle, seeks to correct the deformity by sawing it off subcutaneously, and sliding it upwards sufficiently to permit complete straightening of the limb. A tunnel is made with a stout tenotome, which is entered on the inner side of the rectus muscle, above the knee-joint, and passed along the anterior inter-condyloid fossa into the knee-joint. A small, narrow saw is passed along this track, and the bone is divided from before backward until the posterior compact layer is reached, which is fractured by forcibly straightening the limb. The operation is performed under strict antiseptic precautions, and the limb dressed in the straight position until union has taken place. This operation has been performed a great many times, and, provided the antiseptic treatment was thoroughly carried out, with the most gratifying results.

Reeves has modified Ogston's operation by substituting the chisel for the saw in making the section through the condyle.

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Prof. McEwen* aims to accomplish the same object by making an incision sufficiently large to admit the osteotome, over the inner aspect of the thigh, at a point where "a line drawn transversely from the upper border of the patella, when the limb is in the extended position, and a line drawn longitudinally about half an inch anterior to the spine, for the insertion of the abductor magnus tendon." The bone is divided with the osteotome to a sufficient extent, so that it may be fractured by manual force. The operation is done antiseptically. In very bad cases, where the shaft of the tibia participates in producing the deformity, he advises division of the tibia in a similar manner, from within outward, at a point opposite the lower border of the tibial tuberosity. McEwen has performed this operation over fifty times, and with the most satisfactory results. As the section is made above the epiphyseal cartilage of the femur, the growth of the bone is not impaired, the tendency of the operation being rather to lengthen than to shorten the limb.

Richard Barwell essentially agrees with McEwen in regard to the pathology of this disease, but places greater stress on the necessity of dividing the tibia. He says: "My method of operation consists in dividing, in part with a chisel, in part by fracture, the femur and tibia above and below the epiphyseal lines, respectively, and at each place rectifying its own proportion of the deformity; the operations follow one another in from a fortnight to three weeks." He also advises, in some severe cases, to combine fracture of the fistula with division of the tibia.

Mr. B. E. Brodhurst believes that this deformity is not due so much to an alteration of the bones as to contraction of the biceps muscle and shortening of the external lateral ligament of the knee-joint; hence, he bases his treatment on subcutaneous division of these structures, and orthopœdic after treatment.

Mikulicz,† after making a careful anatomical examination of seventeen preparations of genu valgum, and two of genu varum, and, from an accurate study of the clinical histories of fifty-four cases of genu valgum, and eleven cases of genu varum, has come to the conclusion that the cause of these deformities does not depend on a hypertrophy of one of the condyles, but that it is always due to an unequal development of bone at the epiphyseal junction, which produces a deviation in the axis of the limb, and, as a necessary consequence, a change in the plane of the articular surface. He believes that the essential nature of the process is rhachitis, as most of the specimens present a greater or less number of osteophytes. He recommends subcutaneous division of the shaft at the epiphyseal line in the treatment of these deformities.

Busch‡ accepts the explanation of Mikulicz, and suggests partial excision of the epiphyseal cartilage to restore the equilibrium in the development of bone.

*British Medical Journal, Oct. 18, 1879.

†Archiv f. Klinische Chirurgie, B. xxiii, s. 561.

‡Berliner Klin. Wochenschrift, 1879, No. 38.

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SAYRE'S PLASTER-OF-PARIS JACKET.

Little need be said in relation to the plaster jacket in the treatment of diseases of the spine, as it is universally acknowledged to be the best known treatment in cases of Pott's disease, and, to a certain extent, in the treatment of lateral curvature of the spine. It is known and applied wherever surgery is practiced throughout the civilized world. Many improvements have been suggested, but, I believe, it is generally conceded that the directions, as now given by its ingenious inventor, leave little, if anything, to be desired, to fulfill the indications for which it is applied. I desire, however, to call attention to one great mistake made in applying the jacket, by the great majority of the profession, viz., over-extension. Dr. Sayre's directions in this regard are very explicit, not to extend beyond the "point of comfort;" and yet, many physicians continue the vicious practice of *completely suspending* their little patients, or, at best, to permit them to touch the floor only with the tips of the toes. When I was in New York last winter, I had the pleasure of witnessing many applications of the jacket in the office of Dr. Sayre, and was pleased to observe what great care was exercised in this direction. No one, who has had the privilege of being an eye-witness on these occasions, can ever forget the pleasant faces and smiles of the children during suspension. The great and only rule is to suspend until the patient feels *comfortable*, and then apply the jacket. This amount of suspension *can never do harm*, and whenever mischief has resulted, this rule has not been observed.

Richard Davy,* in a clinical lecture delivered at the Westminster Hospital, advocates hammock suspension as a substitute for the ordinary vertical suspension, during the application of Sayre's plaster-of-Paris jacket in the treatment of spinal curvatures. He gives the following directions: "A piece of strong canvas is procured, longer than the patient's height, and the arms are passed through two slits in the canvas at suitable points, so that, in the first instance, a loose canvas apron, with ends, one turned downwards over the chest, and the other on the floor, fits around the front and sides of the body. This apron is then removed from the patient, and a vest applied, of thicker material and far more open mesh than those usually supplied by the surgical instrument makers. The canvas hammock is next slung, at two fixed points, by attracting its two folded ends with two stout bandages, and the surgeon should test its bearing power by the weight of his own body. The patient is placed face downward in the canvas. * * * * * * * No dinner-pad is required, because the manipulations are performed after a good meal. At this stage, an aperture in the hammock is made over the patient's lips, to permit free breathing and conversation. The patient is then finally localized in position, according to the variety of spinal curvature (extension by the head, arms, and legs being applied by those surgeons who deem it to be necessary), and the surgeon leisurely applies

* British Medical Journal, June 26, 1880.

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the plaster-of-Paris, or other fixing material, including the canvas, which, of course, has been accurately cut to shape the dorsal contour. After the jacket has become sufficiently firm, the patient is taken down in the hammock, and the superfluous ends are neatly cut off with the scissors." As a fixing material, he recommends the addition of hair to the plaster-of-Paris. This method of suspension should be adopted only by those, who will not exercise the necessary care and skill during vertical suspension, as it does not seem to possess any advantage over the ordinary method.

FRACTURES AND DISLOCATIONS.

Fracture of the Nasal Bones.—Fracture of these bones is usually associated with fracture of the nasal processes of the superior maxillary bones, and a breaking down of the central support of the nasal arch, the septum of the nose. The same force which fractures the bones, produces, also, the depression. With the customary methods of treatment, it has always been found difficult to retain the fragments in proper position, and thus prevent the unsightly sinking in of the bridge of the nose, so commonly found after these injuries.

Dr. Lewis D. Mason* has invented a new method for maintaining retention, which has yielded the most satisfactory results. After carefully replacing the fragments, he passes a stout nickel-plated or gilded needle through the skin and the line of fracture, bringing the needle out at a corresponding point on the opposite side of the nose. In case the line of fracture cannot be found with the point of the needle, a small perforation is made through the nasal bone with a drill, on either side, for the passage of the needle; a small strip of rubber bandage is placed over the bridge of the nose, one end being punctured with the point and the other with the head of the pin. This rubber strip should make gentle downward and lateral compression, but not to such an extent as to interfere with the circulation of the part. As soon as union between the fragments has become sufficiently firm to retain them in a normal position, the needle is removed; this can be done, generally, in from six to ten days.

Fractures of the Lower End of the Humerus.—Dr. Oscar H. Allis,† of New York, has very carefully studied the nature and extent of deformity following the treatment of fractures through the inferior extremity of the humerus with the customary angular splints, and makes some very valuable suggestions how to prevent these unpleasant results. From an anatomical and physiological point of view, he gives his explanations why deformity, and a greater or less amount of impairment of function, is the rule after the ordinary methods of treatment. He calls special attention to the obliquity of the lower articular surface of the humerus, and, in consequence of it, the existence of an obtuse angle on the radial side. The deformity following fracture through the lower end of the

*Annals of the Anatomical and Surgical Society, Brooklyn, N. Y., March, 1880.
†Annals of the Anatomical and Surgical Society, Brooklyn, 1880, No. 8.

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humerus, or through the condyles, treated with the orthodox angular splint, presents an obtuse angle on the opposite, that is, on the ulnar, side of the limb. In the treatment of these injuries, he places the limb in the extended position, and for the following reasons: "1, in this position I have an advantage of comparison during the dressing that I have in no other position; 2, when only one condyle is broken, if the ulnar side of the joint is the only one that is injured, I have, in the extended position, the whole length of the radius to act as a splint or a controlling lever."

To maintain retention, he relies on strips of adhesive plaster applied over the lateral and posterior aspects of the limb, and extending from the shoulder to the wrist, to which is added a layer of cotton-batting and bandage. In some cases, where a firmer dressing is required, he impregnates the bandage with egg paste. He is opposed to early passive motion.

Tripolith.—At a meeting of the Medical Society of Berlin, B. v. Langenbeck* called the attention of the members to a new material for permanent dressings, called tripolith. Its exact chemical composition is still a secret, although it is well known that calcium and silicium are its most important ingredients. It appears in the market as a grayish powder, smoother and softer to the touch than plaster-of-Paris. The advantages claimed by Langenbeck for this material over plaster-of-Paris are: that it absorbs less moisture from the atmosphere, and, consequently, does not lose its plastic properties in such a short time if exposed to atmospheric air; the splints are lighter and harden more quickly, and, when completely set, do not absorb water; consequently, patients can take baths without impairing the firmness of the dressings.

Fracture of the Patella.—The treatment for fracture of this bone has been about as varied as that of fracture of the clavicle, and the results equally unsatisfactory. The object of the different forms and methods of treatment has been to keep the fragments in apposition for a sufficient length of time for bony union to take place, an occurrence which seldom has taken place, and if so, it has been at the expense of the functional perfection of the joint. Last winter, while in New York, I was permitted to examine a specimen of fracture of the patella in Prof. Hamilton's possession, where the callus on the under surface formed a bony bridge between the broken bone and the lower end of the femur, producing complete anchylosis. Prof. Hamilton assured me that this was the only instance where he had ever seen bony union after fracture of the patella.

Stimulated by the brilliant results of antiseptic surgery, a number of surgeons have advocated the propriety of opening the knee-joint freely, and wiring the fragments together for the purpose of securing bony union. Although the operation has been successful in a number of instances, the procedure is not compatible with good surgery. At least one case is reported where death was attributable directly to the operation.

Recognizing the fact that bony union without impairment of function, seldom, if ever, takes place, and that a certain amount of stiffness is una-

* Berliner Klin. Wochenschrift, 1880, No. 49.

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voidable with the usual treatment by immobilization, Rossander* recommends massage to remove the effusion in the joint. He discards the use of splints and applies a simple roller bandage, and allows early passive motion. To show the efficacy of this treatment, he reports a case of fracture of the patella, treated in the usual manner, and which was followed by partial anchylosis, which resisted all kinds of treatment. The patient suffered another fracture by an accidental fall, the bone being separated in three pieces. He was treated by Dr. Mezger with massage, and recovered sufficiently to re-enter the service in the army. This treatment cannot be called new, as it has been practiced by a Swiss surgeon nearly a hundred years ago.

I do not mention this method of treating fractures of the patella as an improvement in surgery or worthy of imitation, but simply to call attention to the value of early passive motion in preventing the stiffness of the joint which almost invariably follows this accident when treated in the manner prescribed by our text-books.

Improved Method of Applying Plaster-of-Paris in Cases of Compound Fractures.—The application of plaster-of-Paris bandages, in cases of compound fractures, has never been considered an easy task, on account of the difficulty which is always experienced in securing a proper opening in the splint over each wound. Even Szymanowski's direction, to leave an opening at the time the splint is applied, is not easily carried out.

Dr. Rochelt† describes a new and easy method in accomplishing this object. One-half of a pasteboard box of desirable size, is secured to the limb by means of a roller bandage at the point where the opening is to be made. The plaster-of-Paris bandage is applied in the usual manner; passing it around, but not over, the box. As soon as the splint has become firm, the dry bandage confining the box is cut, and, the latter being removed, leaves a convenient circular opening of sufficient size in the splint.

Re-dislocation of the Shoulder-joint.—Almost every practitioner has observed cases, where, after dislocation of the shoulder-joint, the functional capacity of the joint remained permanently impaired, predisposing to re-dislocation on the slightest causes. Cases are on record where this accident occurred more than one hundred times to the same individual. Authorities have sought to explain this occurrence, in different ways; some attribute it to extensive rupture of the capsular ligament and incomplete repair of the rest; others assume that the capsular ligament has become relaxed; while a third class take it for granted that the glenoid cavity has suffered a simultaneous lesion during the original injury.

Prof. Joessell has studied this subject with great care, and has written an exceedingly valuable and practical paper, based on a study of nine

* St. Petersburger Med. Wochenschrift, 1879, No. 50. Centralblatt fuer Chirurgie, 1880, No. xv.

† Wiener Med. Blaetter, 1879, No. 39.

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post-mortem specimens, in possession of the museum in Strassburg. As the result of his investigations, he has arrived at the following conclusions: 1st, the predisposition to re-dislocation of the shoulder-joint is created by laceration of muscles, and a failure, on their part, to form attachments to the upper end of the humerus; 2d, recidivations are, in all probability, favored by relaxation of the capsular ligament, a condition which is always present in these cases.

In rare instances, a fracture of the glenoid cavity, or of the head of the humerus, may become predisposing causes, by diminishing the surfaces of the articular cavity. In most cases of recent dislocation, dissection reveals the fact that the tendons of the supra and infra spinatus muscles are constantly found ruptured, and that they have retracted in many instances, carrying with them portions of the greater tuberosity of the humerus. As these tendons are intimately connected with the capsular ligament, a failure on their part to reunite will weaken and relax the ligament. A rupture of the tendon of the subscapularis, a less frequent accident, is an additional cause of impairment of the capsular ligament, and renders re-dislocation more probable. The same may be said of one of the tendons of the biceps, which takes its origin from the upper margin of the glenoid cavity.

The practical lessons to be drawn from these researches are, to place the arm, after reduction, in the most favorable position to obtain union of the lacerated tendons with their points of attachment, and not to interfere with the reparative process by resorting to too early passive or active motion.

Fracture of the Head of the Radius.—Dr. Hofmokl* has called attention to this fracture among children. In the course of four years, he has seen seventeen cases of intra-capsular fracture of the head of the radius in children, from one to ten years of age, the largest number occurring in patients from two to five years of age. In most instances, the accident occurred from a sudden traction on the hand, to prevent the child from falling. In some cases, the fracture was produced by a fall upon the hand; the least frequent cause being a fall upon the elbow, or a direct blow. The most characteristic symptoms were slight flexion and pronation of the forearm. The arm hangs uselessly by the side, and when it is moved, the child complains of pain in the region of the wrist. On direct examination, by applying the thumb over the radio-brachial articulation, and making pronation and supination,—the latter movement is limited, and can only be fully accomplished after making extension, when well-marked crepitation is felt. During this movement, the fracture is reduced and the symptoms are at once relieved. Experiments made on the cadaver, confirmed these views. He concludes his paper with the following conclusions: 1, forced pro and supination alone can not produce this fracture; 2d, direct violence would have to be relatively severe to produce this fracture, and would have to be applied accurately to the point of

* Wiener Med. Presse, No. 12 u. 13, 1879.

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fracture; 3d, this fracture might be produced by muscular contraction, in case the head of the radius is firmly fixed, as is the case when the elbow is semiflexed, pressing the concave surface of the head of the radius against the convex surface of the humerus, by means of the ligaments and muscles.

After reduction, the treatment advised consists in fixation of the limb for three to four weeks.

NERVE-STRETCHING.

Since the accidental discovery of nerve-stretching as a therapeutic agent, by Nussbaum, this procedure has been applied for the relief of diverse pathological conditions, as neuralgia, traumatic tetanus, locomotor ataxia, etc.

Dr. T. G. Stewart,* of Edinburgh, reports the case of a man seventy years of age, who had suffered some seventeen years from spasmodic epileptiform neuralgia, who was cured by this operation, at least the patient remained perfectly well five months after the last operation. The man suffered almost unbearable pain during the attacks and had received only temporary benefit from the various methods of treatment, including nerve-section and excision. As this form of neuralgia is considered as the most obstinate — being regarded incurable by Trousseau, who first described it — Dr. Stewart suggested nerve-stretching as practiced by Nussbaum as a *dernier ressort.* The supra orbital, infra orbital and mental branch of the trigeminus were stretched at different times, each operation being followed by prompt relief.

Mr. Charles Higginsꝗ gives an account of a case of nerve-stretching on a man sixty-two years of age, who had suffered the loss of the left eye, after an injury from a blow with a piece of iron. Although the eye had been extirpated, a severe neuralgia in the region of the first and second branch of the fifth nerve remained. The supra orbital and infra orbital nerves were exposed and stretched on two different occasions, with the effect of immediate and permanent cessation of pain. A certain degree of numbness, but not complete loss of sensation, in the district supplied by these nerves remained for a considerable length of time, but gradually disappeared. He reports another very similar case where the pain, after the removal of the eyeball, was limited to the supra orbital nerve. The nerve was exposed at the supra orbital notch, and well pulled with forceps. The result was equally satisfactory.

Dr. E. Masing‡ reports a case of severe and inveterate neuralgia, affecting the supra orbital nerve, cured by nerve-stretching. The greatest pain was in the course of the naso-ciliaris, the infra-trochlear, and the ethmoidal nerves. As these branches could not be reached, the reporter exposed the supra orbital nerve in its entire course along the roof of the orbit, and with a blunt hook stretched it near the orbital fissure, by pull-

*British Med. Journal, May, 1879.

ꝗBritish Med. Journal, June, 1879.

‡Monthly Abstract and Med. News, May, 1880.

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ing it inward and separating it from its adhesions to the bony vault. Complete anæsthesia of that side of the forehead and cornea followed, and lasted for six months. The pain diminished gradually, but did not entirely disappear for several months.

Kocher* also stretched the supra-orbital nerve for severe neuralgia. The pain ceased immediately after the operation; anæsthesia followed, and lasted for four months. At this time there was no recurrence of pain.

Mr. Walter Pye† relates a case where the sciatic nerve was laid bare and well stretched in a case of obstinate sciatica. The wound healed kindly, and the pain ceased promptly, but soon appeared again in the calf of the leg. There was no paralysis, but loss of sensation, and as soon as the latter was restored, the pain returned.

Hildebrandt‡ stretched the sciatic nerve in a woman thirty-two years of age, who suffered severely from sciatica. He exposed the nerve in the popliteal fossa, and pulled it, in both directions, six times. The vessels of the nerve-sheath were found dilated, and the sheath itself opaque. The pain ceased immediately, and the patient remained well after fifteen months. In a second case, the brachial plexus was stretched in a young man who was suffering from pain and stiffness in the fingers of the right hand, the result of exposure to wet and cold. Recovery took place, and no relapse had occurred after eight weeks.

Credé‖ operated upon a female patient suffering from ascending neuritis of the left radial nerve, with contraction of the arm, the result of an injury received nine months previously. The radial, ulnar, median, and axillary cutaneous nerves were exposed by an incision at a point where these nerves are covered by the coraco-brachialis muscle. The nerves in the sheath were accompanied by varicose veins, and were covered with ecchymosed spots. When the nerves were stretched in both directions, their grayish color gave way to a dark red. The pain and contraction of arm ceased immediately after the operation, and the general condition of the patient improved rapidly. Credé attributes the success of the operation to an improvement of nutrition in the nerves, brought about by the stretching. The operation may also have acted beneficially in promoting the absorption of inflammatory products, and in breaking up adhesions.

Dr. H. Schuessler,§ of Bremen, alludes to a case of neuralgia of the occipitalis major, cured by nerve-stretching. The patient, a woman fifty-three years of age, had suffered from a neuralgic affection of this nerve on the right side for three years, and had received no benefit from the usual methods of treatment. The nerve was cut down upon and stretched at a point where it takes a subcutaneous course, after emerging

* Correspondenzblatt fuer Schweizer Aerzte, 1879, No. 11.
† British Med. Journal, July 24, 1879.
‡ Deutsche Med. Wochenschrift, 1880, No. 36.
‖ Centralblatt f. Chirurgie, 1880.
§ Berliner Klin. Wochenschrift, 1880, No. 39.

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from the trapezius muscle, and takes a direction towards the external spine of the occipital bone. The sheath of the nerve was thickened and preternaturally vascular. There were a few attacks of pain after the operation for three days, which, however, subsided on the fourth day, never to return.

Among the many remedies which have been resorted to at various times in the treatment of traumatic tetanus, we may now include nerve-stretching.

M. Verneuil* stretched the median at the elbow, and ulnar at the wrist, in the case of a man suffering from tetanus, after an injury of the hand by crushing. The patient recovered completely.

Dr. Eben Watson reports two cases. One was a boy, sixteen years of age, who, eleven days after he received an injury of the hand, manifested symptoms of tetanus. The cords of the brachial plexus were stretched, but the patient died the day after the operation. The second case was a man, aged thirty-five years, in whom the disease was developed five days after he had his hand crushed. The ulnar, median, musculo-spinal nerves were stretched; the paroxysms, however, did not abate, and the patient died during one of these attacks, on the thirteenth day after the operation.

Mr. Henry Morris stretched the great sciatic nerve at its point of emersion from beneath the gluteus maximus muscle, in a child, seven years of age, who was suffering from tetanus, seven days after a severe contusion of the foot, which resulted in gangrenous patches about the ankles; the child was also affected at the same time with a slight bronchitis. The operation appeared to aggravate the symptoms, and the little patient died six and a half hours later.

When we consider how utterly useless even amputation has proved itself in arresting the progress and averting a fatal termination of this disease, it is difficult to conceive in what way nerve-stretching should accomplish the desired object, and this operation will soon be abandoned and pass into well-merited disuse in the management of this disease.

B. v. Langenbeck† has recently resorted to nerve-stretching for the relief of severe pain attending a case of locomotor ataxia. He observed that the sudden attacks of agonizing pain were located in the region of the left sciatic nerve, and he was thus induced to stretch this nerve. Prompt relief followed the operation. Under antiseptic precautions, the wound healed kindly. The motor and sensory paralysis disappeared in a few days, and the pain did not recur. Encouraged by this unexpected result, he treated the crural and right sciatic nerves in the same way, and found, to his utter astonishment, not only that the pain disappeared completely, but that the patient recovered completely from the ataxy.

Esmarch stretched the brachial plexus in an analogous case, with marked benefit to the patient.

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*British Medical Journal, June 21st, 1879.

†Berliner Klin. Wochenschrift, 1879. No. 48.

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In Nussbaum's case great improvement followed the operation, which lasted for, at least, several months.

Socin* operated upon a man sixty-one years of age, who had been suffering from locomotor ataxia for twenty-eight years. The pains along the sciatic nerves were severe. The right sciatic nerve was stretched. The pain in the right leg ceased immediately after the stretching, but continued unmodified on the left side. It was therefore decided to subject the left sciatic to the same procedure. On the fifteenth day after the last operation, the patient died suddenly from pulmonary embolism, arising from thrombosis in the right crural vein, as was ascertained by a post mortem examination.

Prof. Hirschfelder,† of San Francisco, reports a case of nerve-stretching for locomotor ataxia, which is well calculated to warn the profession against an indiscriminate resource to this operation in the treatment of such and kindred cases. Both sciatic nerves were stretched at the same time, in a case of well-advanced ataxy. A few hours after the operation the patient was seized with an epileptic paroxysm, fever supervened, and on the second day the patient died suddenly, during the second epileptic attack.

The indications for nerve-stretching are, as yet, not well established, and it must be left for future research and experience to assign to it its proper sphere, and thus elevate it from the low level of empiricism to a scientific procedure. Experience has taught us that it is most likely to succeed in cases where the nerve sheath has become a source of irritation from inflammation and adhesion. It is also advisable to operate under antiseptic precautions, and not to attack too many nerve-trunks at the same time.

NERVE-SUTURE.

Since Gluck‡ has demonstrated, by experimental researches on animals, that the divided ends of nerves, if brought and retained in contact by sutures, will unite, and that the nerves thus re-united are capable of performing their physiological functions, surgeons have taken advantage of this knowledge, and have resorted to nerve-suture, in cases where large nerve trunks have suffered a loss of continuity. In recent wounds, where a large nerve has been divided by accident, or during an operation, it is now deemed necessary and judicious to secure apposition of the nerve ends by means of catgut sutures before closing the wound. A number of successful cases are now on record where nerve-suture was practiced long after the wounds had healed which inflicted the injury, but where the nerve ends failed to re-unite, and where, as a necessary consequence, paralysis existed in the parts supplied by the injured nerve.

Simon Vogt, of Greifswald, and von Kraussold, have each cut down on the severed median and ulnar nerves, and united the resected ends

* Correspondenzblatt f. Schweizer Aerzte, Dec. 15, 1880.

† Pacific Medical and Surgical Journal, 1880.

‡ Experimentelles zur Frage der Nerven-naht und der Nerven-regeneration, 1878.

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with sutures, and have been successful in restoring proper innervation of the parts supplied by these nerves.

Esmarch operated upon a girl who had suffered from an incised wound over the anterior aspect of the forearm at the junction of the middle with the lower third. The radial nerve was divided and failed to unite. Sixteen months after the injury, he cut down upon the nerve-ends and united them with a suture. Three days after the operation sensation returned, and in three weeks motion was restored. In nine weeks the patient was discharged unimproved, sensation and motion having gradually been lost. Five months subsequently improvement again became apparent and steadily increased, until both motion and sensation were completely restored.

B. von Langenbeck,* two months after an injury, cut down on the ends of the ununited radial nerve, at a point where it becomes superficial between the triceps and brachialis internus muscle, and, after a careful dissection, succeeded in finding the peripheral and proximal ends, which were vivified and brought together with a catgut suture, which was passed through the entire thickness of the nerve. Great difficulty was experienced in bringing the ends in contact on account of tension. The operation was rendered bloodless by the application of Esmarch's bandage, and was done under antiseptic precautions. No great pain followed the operation; the wound closed by primary union and restoration of function began to take place a few days after the operation and progressed favorably until complete and permanent recovery was established.

Mr. Wheelehouse† reports a most remarkable case of nerve-suture. His patient suffered a complete division of the sciatic nerve, the wound being inflicted by a scythe. The nerve did not unite, and, as a result, the limb became completely paralyzed and atrophic. As the limb was worse than useless, the patient applied to Mr. Wheelehouse for the purpose of undergoing an amputation. Mr. Wheelehouse exposed the divided nerve-ends by an incision through the cicatrix, and, having vivified them, brought them in apposition with sutures. The nerve united promptly, motion and sensation returned, and the function of the limb was completely restored.

Langenbeck operated on a similar case, but the result was unfavorable.

At a meeting of the Clinical Society of London, Mr. Hulke reported a case of successful suturing of the median nerve. The nerve had been severed by a cut above the wrist. The wound healed in five weeks. After the healing of the wound, the fingers supplied by the median nerve were deprived of sensation. The nerve was exposed by an incision through the cicatrix, and the ends, which were found separated two centimetres, were vivified and approximated by forcibly flexing the hand, and sutures of fine silk applied, and the limb fixed in a splint of special construction. Four weeks after the operation sensation had returned, except in the terminal phalanges of the index and middle finger.

* Berliner Klin. Wochenschrift, February 23, 1880.

† British Medical and Surgical Journal, 1880.

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LITHOLAPAXY.

Litholapaxy is the name given to a new operation for removing stone from the bladder. This new method was introduced to the profession by Dr. J. H. Bigelow, of Boston, in January, 1878. The reputation of its distinguished inventor gave it ready introduction among practical surgeons. The success attending this operation has been such as to secure for it an enviable position among the most brilliant surgical procedures. Although crushing of a stone in the bladder has been practiced for many years, this operation presents so many new features, and possesses so many advantages over the older methods, that it well deserves the distinction of being called new. It is said that lithotrity was performed, in a rude manner, upon the old monk Theophœnes, in the beginning of the ninth century. Civiale, however, first conceived and carried out the idea of partial crushing of a stone in the bladder. He first successfully applied his litholabe upon a living human subject in 1824. Heurteloup, Amussat, Leroy, d'Etiolles, and, more recently, Sir Henry Thompson, have greatly improved lithotrity, and the great success attending their operations has brought it prominently before the profession. Bigelow's operation has for its object the crushing of the stone, and entire removal of the debris, by aspiration, during one sitting.

Dr. E. L. Keyes* has collected one hundred and twenty cases of litholapaxy, of which number one hundred recovered, and twenty died, a mortality of six per cent. This may be considered a good result, as the average age of the patients was over fifty-five years. One of the most important features of Bigelow's operation, is the length of time required for the complete fragmentation of the stone, and the tolerance of the bladder to such prolonged contact of instruments. Bigelow cautions to perform the operation slowly, deliberately, and without regard to the length of time for completing it; from two to three hours may be consumed, without impunity to the patient, provided, the manipulations are made with the necessary care and gentleness.

DRAINAGE OF THE BLADDER IN CASES OF HYPERTROPHY OF PROSTATE.

In cases of long-standing hypertrophy of the prostate gland, with inability of the bladder to discharge its contents—conditions which give rise to cystitis, with its train of distressing symptoms,—Sir Henry Thompson† proposes to establish a permanent urinary fistula above the pubis. In performing the operation, a curved hollow sound is used, containing a stilet with a bulbous end. After the introduction of the instrument into the bladder, its point is made to press against the wall of the bladder, behind the symphysis, and is intended to serve as a guide for the knife, and to protect the posterior wall of the bladder. A small incision

* Annals An. and Surg. Society, June, 1880.

† British Medical Journal, June 7, 1879.

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is made through the linea alba, just above the pubis, and the bladder carefully exposed and perforated over the point of the sound. Great care is necessary to avoid opening the peritoneal cavity, as the bladder in these cases, as a rule, is contracted and situated lower down. As a matter of safety, the puncture ismade more behind, than above the pubis. A gum-elastic tube, provided with a shield like that of a tracheotomy tube, is next passed into the open end of the sound (the stilet having been withdrawn), and introduced into the bladder by withdrawing the sound. Great care is necessary to keep the tube clean. This operation is also applicable, and affords great relief, when the obstruction to the flow of urine is caused by pressure of other tumors, which can not be removed with safety. Thompson has resorted to this procedure in three cases of hypertrophied prostate, once for cancer, and once for villous tumor, the relief being prompt in all of them. This direct opening into the bladder not only alleviates suffering but opens a direct and convenient route for treating the interior of the organ.

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ART. IV.—ANTISEPTIC TREATMENT OF CYSTITIS IN THE FEMALE.

BY DR. KNUT HOEGH, OF LA CROSSE, MEMBER OF THE COMMITTEE ON SURGERY.

As the adaptation of antiseptic treatment in surgery has almost revolutionized our practice within a decade, I believe that every case that appears to enlarge the territory of this reigning principle may be of some interest. As an illustration of the usefulness of antiseptic regimen, and a spur to improve methods, I will therefore cite a case of cystitis, where the ordinary means of treatment had proved not capable of doing much good, but where antiseptic treatment of the bladder gave, at least, great relief, and a certain degree of improvement.

In August, 1880, Mrs. I. R. sought my advice for a disease connected with her urinary organs. She was about twenty-eight years of age, of a robust frame, strong constitution, and possessed an evenly-balanced, healthy nervous system. She had been married about five years, and had conceived once, about three years ago, but, at the end of the third month, she had a miscarriage without any apparent cause. After this accident she never felt entirely well; but, aside from occasional uncomfortable sensations in the pelvic region of a rather vague nature, she suffered no pain, and performed the natural functions well; menstruation regular about every four weeks, moderate in amount, followed by a slight and painless leucorrhœa. Some time after the miscarriage she consulted an advertising practitioner, who claimed that she had prolapsus uteri with retroflexion. He applied a pessary, which she wore for three months. At the end of that period, she began to suffer from painful and frequent micturition, and as this symptom increased, she consulted another doctor, who removed the pessary. She had, however, from that time until she came under my treatment, constantly had this difficulty, and, in spite of what I had every reason to believe was judicious treatment, she constantly grew worse. Each act of micturition was accompanied by excruciating pain, which occasionally almost induced fainting, and which lasted for a long time afterwards. Although she had a frequent desire to urinate, she had considerable control over the bladder, and did not allow herself to pass water more than about six times in twenty-four hours. The urine was turbid and of a dirty-brown color, and mixed with mucus and blood. Toward the end of the act she would frequently pass a clot or shred, that looked like a somewhat disintegrated membrane, covered with pus and blood. Specific gravity was 1015; reaction, neutral. The urine being bloody, it, of course, gave a precipitate with nitric acid, and, upon being

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boiled with a few drops of acetic acid, under the microscope were seen pus cells, bladder epithelium, blood corpuscles, but nothing that I could recognize such as kidney epithelium casts or malignant elements. An endoscope not being at hand, the bladder could not be directly inspected. Vaginal examination did not reveal any abnormal or diseased condition of uterus, but there was considerable tenderness in the anterior vaginal wall, and especially so at a point corresponding to the neck of the bladder, where even the slightest pressure produced excessive pain. The bladder was carefully examined by sounds and catheters without detecting calculi or projections that might result from any kind of neoplasms. The other organs of the body did not exhibit any sign or symptom of disease. Lungs healthy; no tuberculosis in the family. The diagnosis of chronic cystitis with probable ulcerations was made. The patient had already been treated, in vain, with rest in bed, the ordinary internal remedies for cystitis, washings, and medicated injections of the bladder. It seemed to me that the only thing that offered any chance of success, and had not yet been tried, was to procure absolute rest for the organ. This is one of the most important therapeutical measures in cystitis, as in inflammations generally, and it is well worth the trouble to consider the different methods by which it usually is attained. Our aim is to put the muscular fibres at rest, so that the urine can dribble away as soon it reaches the bladder from the ureters. In inflammations of other organs provided with a sphincter muscle, we find that artificial paralysis of this muscle is of paramount importance. One of the remedies found most useful in such cases is belladonna; its effects in iritis, dysmennorrhœa, and diseases of the rectum are sufficiently well known, and, I think, I may venture to say, that as a sedative and anodyne for the bladder it is more efficacious than opium. This is probably partly due to its paralyzing effect upon the sphincter, and partly to direct action upon the terminal nerve fibres, as atropia is excreted through the kidneys. But its systemic effects prevent us from relying exclusively on it for complete paralyzation of the circular fibres, and we must, therefore, resort to mechanical means for keeping the bladder at rest.

In forcible dilatation of the urethra in the female (Simon), we have a remedy that repeatedly has achieved success in chronic cystitis. But this remedy has a serious drawback, as permanent insufficiency of the sphincter in several cases has remained (Mundé), and in some cases the urethra has sustained irreparable injury from the operation (Emmet). This operation ought, therefore, to be reserved for cases where less dangerous remedies have failed.

Another method by which the much-needed rest may be obtained is by the provisional establishment of a vesico-vaginal fistula. Such a fistula, however, has a great tendency to close up too early for our purpose, if it be of a moderate size; and if it be produced by the thermo cautery, and with a considerable loss of substance, there may be difficulty in closing it, and, in some cases, even failure. The treatment involves, besides, a

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great deal of discomfort; the patient cannot be kept dry; the closure of the fistula necessitates a tedious and painful operation with prolonged after-treatment. The results of this operation have not in any way corresponded to the sacrifices and the risks taken. As far as I know, there only remains one method by which the end in view can be reached, and that is, drainage by means of a catheter kept permanently in the bladder. This plan was consequently tried in my case, in connection with daily washings of the bladder; internally an infusion of uva ursi and folia buchu was used. The patient was kept in bed to relieve the distressed pelvic vessels of the pressure from gravitation. For the first ten or twelve days the result of this treatment was very gratifying, the tenesmus disappearing, the blood diminishing; but soon a relapse occurred that made matters worse than they had ever been before. The urine became alkaline, thick, almost like a jelly, of a most penetrating foul odor; pain reappeared, and my patient came near leaving me in despair. The temporary improvement seemed to indicate that the idea of bladder-drainage was the correct one, and the question was to find out why it failed. My explanation was that the catheter, being in open connection with the external air, had constituted a route through which decomposition germs might travel; they had infected the mucus, and thereby produced irritation of the mucous membrane and an acute exacerbation of the chronic cystitis. If this reasoning was correct, the best method of treatment was to disinfect the bladder and to exclude from the vesical cavity the germ-infected external air. I did this, and succeeded, at least to a certain extent; and this may, perhaps, be my excuse for giving the details of my treatment, as I had never met anything in literature that had direct reference to this point. Since then, however, I find that Mr. John Cheyne, of Edinburgh, Scotland, read a paper upon antiseptic bladder-drainage before the Medico-Chirurgical Society of Edinburgh, about one month after I had instituted this treatment. He used it first in August, 1876, but had so far only succeeded in male patients.

The first thing I did was to wash out the bladder with mild salt water of blood-temperature, to remove all mucus. This was done — as were all subsequent washings — by means of an irrigator suspended about three inches above the patient, and connected under carbolized water with a slender rubber tube, which was drawn air-tight over a very small Sim's silver catheter. Only one or two ounces were allowed to run into the bladder at once.

The rubber connecting the catheter with the irrigator-tubes was then severed from this without allowing it to come out of the carbolized water. The injected salt water would then run out from the bladder into the carbolized water, without having any chance of communication with the external air. The irrigator tube was then again, under the same carbolized water, connected with the rubber tube, and the bladder was again filled, without any chance of contamination from the air. When, after repeated washings, the water that served as a "trap" (in a sink) had

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become cloudy, so that the character of the fluid returning from the bladder could not be recognized, the rubber tube was grasped firmly between two fingers at its lower part, and lifted out of the fluid, allowing nothing to escape, until it was again deposited in a fresh supply of carbolized water, in which it was again connected with the irrigator, and the washing repeated as before. When, finally, the water returned clear from the bladder, the irrigator was filled with a two-per-cent. solution of carbolic water, the connection with the bladder brought about as before, under carbolized water, and the fluid from the irrigator allowed to enter the bladder. After this another washing out with salt water as before, and then the rubber tube from the catheter immersed in an ether can half filled with carbolic water, and placed upright between the thighs of the patient. The rubber tube was, of course, carefully shut off, until its end was immersed in the carbolic water. The urine escaped constantly from the bladder into the can, which the patient kept in the above indicated position during the whole treatment. Once every eight hours the ether can was exchanged for another, always taking care to allow no air to enter through the tube, the column of water below the point of compression preventing the admission of air. It is probably needless to remark that hands, vessels, instruments, and appliances were carefully disinfected, and the greatest cleanliness observed.

The next day the washing out of the bladder was repeated, only substituting a two-per-cent. solution of boracic acid for the carbolic acid injection, which was considered too irritating to the bladder, but used the first time as being a more reliable disinfectant.

The urine assumed an almost perfectly normal appearance after two or three days; blood disappeared entirely and also albumen, and the only pathological element was a somewhat increased amount of bladder epithelium.

After faithfully carrying out this treatment for three weeks, I thought that drainage had been kept up long enough, but I was disappointed in this. After the patient had been allowed to retain her urine for a gradually increasing length of time, the bladder epithelium increased in quantity, and slight pains, with frequent desire to urinate, came on; no blood, however, made its appearance, and none of the first-mentioned shreds. It became necessary to put the patient back to bed, and return to the old treatment, which was now kept up for six weeks. This time the result was more satisfactory, and after the patient had been kept under observation for a couple of weeks more, and no unfavorable symptom had shown itself, she was sent home. The urine seemed, however, yet to contain a little more epithelium than normally, but the condition of the bladder was, compared with its condition when she first came under my treatment, immensely improved. The patient herself was highly satisfied. I heard from her several months after her return home, and learned that she was doing well.

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ART. V.—IS THE OBSTETRIC BINDER NECESSARY?

BY HENRY P. WENZEL, M. D., OF MILWAUKEE, MEMBER OF COMMITTEE ON OBSTETRICS.

Does the obstetric bandage produce comfort to the lying-in woman after delivery, or is the binder an antiquated heir-loom, handed down from by-gone generations — gaining an *quasi* stamp of utility, which protects the patient against hemorrhage and vacancy. (?!) The modern American and English obstetric authorities hold that the binder produces comfort and safety when snugly applied, after the placenta is delivered and the uterus has well contracted. We are also instructed that it is a safeguard against hemorrhage, the wounded, blood-weeping uterus purposely remaining stationery to be squeezed. The binder is ostensibly a panacea against all the ills of child-birth.

In our opinion, the binder is not only useless, but oftentimes positively injurious, when applied shortly after labor is accomplished; because, if the bandage is loosely applied, it exerts no influence on the abdominal parieties; if too narrow, it becomes a constrictor, a positive cause of hemorrhage; if too snugly drawn, it causes discomfort, pain, tenesmus. After the bandage has been secured, and an examination is made a few hours later, it will be found, generally, at the lower border of the thorax, or, perhaps, rolled together above the iliac crest.

The obstetric bandage is worn for safety and comfort, we are told, but it appears to be the *most comfortable* away from the uterine region, away from doing harm—doing no good, only a useless impediment, supporting where support is not necessary and leaving the relaxed abdominal walls to take care of themselves.

Schroeder, in his Obstetrics, does not mention the bandage at all, and we naturally infer that he does not use it. In the Munich Lying-in-Department, the obstetric binder is interdicted. Many German Obstetricians object to the binder, and not a few condemn it.

Siebold says: . . . "During this time the woman must be carefully watched—pulse, skin temperature, facial expression—and a watchful eye must be kept on the uterus that instant assistance may be rendered in flooding." "*But the abdominal skin perspiration must not be interfered with.*" "*Unnecessary and even dangerous is the practice of tightly bandaging the belly of the parturient patient immediately after birth.* If a bandage is applied, it should be a wide piece of flannel, to *retain a moderate, equable temperature; but all pressure on the internal organs must be avoided.*" "Later, when the woman has *already left her bed*, a wide,

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[elastic] knit bandage, which neatly supports the abdomen, may be worn. That which women wish to attain by bandaging, prevention of a too prominent belly, is more easily obtained by washing the abdomen with lavender spirits, etc., which should be permitted only from four to six weeks after birth." (Lehrbuch der Geburtshilfe von Ed. Casp. Jac. von Siebold, Braunschweig, 1854, page 341, *et. seq.*)

In an obstetric manual for midwives, first issued in 1771, by M. Solayers, subsequently revised by Baudeloque, and later by Lebaud, we read, page 163: "To prevent prominent belly by tight bandaging is fraught with great danger."

Cazeaux writes, "but in order to obtain all these benefits, it [the binder] should be large enough to compress the whole sub-umbilical region equally. Care should be taken to *prevent its becoming doubled up, whereby a circular cord is formed, which, by opposing the ready return of the fluids, would then prove a cause of hemorrhage.* (Italics mine.) The body bandage may be replaced with advantage by a *folded cloth applied flat upon the abdomen, which it compresses greatly by its own weight, which is sufficient for the purpose*" (page 406).

The principal reason for bandaging the abdomen, is to reduce the relaxed abdominal walls to the *ante*-pregnant state; but the signs of pregnancy and parturition cannot all be eradicated by any bandage, however snugly applied. In surgery, we refrain from constricting an atrophied or relaxed member, fearing to increase the lesion, but in obstetric practice the reverse obtains—a marked inconsistency!

"Meddlesome midwifery is bad," and the worst meddling is the application of a *useless* bandage, which is *not essential* to the patient's comfort and safety. I once heard that "a partial vacuum exists in the abdomen immediately after birth;"—nature abhors a vacuum. In every instance vacuity and fullness are equalized by natural laws, which are always operative and in force, except in parturition, the vacuum is so large that nature can only overcome the emptiness with the assistance of a piece of cloth, and thus balance the universal void. The uterus must be tickled by the constricting binder before it will shut down! Were such contrivance indicated or necessary, the defects would have been rectified by nature long ago, by the creation of some auxiliary support, to be called into action when the exigencies of the case demand it.

Viewing the binder from a physiological standpoint, it is not only unnecessary, but an obstacle interfering with the superficial circulation and damming it into the pelvic cavity, which at this time is not only gorged with blood from the physiological activity just passed, but the generative tract is more or less bruised and lacerated, and the interior of the womb at the placental site presents a large wounded surface, and these lesions—the pelvic vessels being surcharged with blood—may become foci of flooding. If the binder is applied tight enough to serve its object—compression—it will naturally cause what it was intended to prevent, viz., flooding. The inferior animals are not tortured with Russian bandages.

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Parturition is a normal, physiological process. Has the female economy deteriorated by the progress of advanced civilization, that the uterus has lost its inherent power of taking care of itself, or have the nerves lost their governing, and the striped and unstriped muscular fibres their contracting power? Has the uterus become a *locus minoris resistentia*, that the binder must be used under the cloak of sympathy? or does fashion, or, if you please, custom, dictate the use of a dangerous ambush that may destroy the patient? It is certainly contrary to natural laws, and abused nature avenges herself in many ways by bad "getting up." There is no doubt that many female troubles are born in child-bed, brought forth indirectly by the customary bandage! The only reason for its use is to follow a traditional custom.

Does the binder exert an equable and constant pressure on the abdominal parieties and uterus? The sub-umbilical surface is an irregular, convex surface, bounded laterally by the iliæ, and below by the pubes,—projecting bone prominences, that interfere when gentle compression is sought by a bandage; hence, a "pad" is forced under the bandage to increase the irritation, causing intense pain, and rectal and visical tenesmus at times. Constant equable pressure can be carried out on a stationary, spherical body, like the uterus, whose external surroundings present no inequalities.

The uterus constantly changes its position after labor during the first twenty-four to seventy-two hours, and any perceptible pressure exerted on that wounded and very sensitive organ produces irritation, and, in accordance with well-known physiological laws, the body, or part irritated, recedes from the irritating focus, and the uterus slips away from the compressing force. Hence, if a constant and equal pressure must be enforced, the binder becomes an animate being, with perceptive discrimination, and moves to the loins or thorax, where it is out of harm's way. (!) We are so blind that we do not perceive these things under our very eyes. I have seen cases in which the astute binder caused much annoyance and even severe suffering, and its removal produced comfort and quiet repose. Of course, it will be said the bandage must be applied with judgment; (?) true, but one patient is sensitive, another indifferent, etc., and a correct discrimination in all cases is impossible; midwives constrict the abdomen tightly.

So long as the patient is confined to bed, the bandage is useless as a support to the relaxed abdominal wall, for there is no pressure exerted on the parietes from within until the patient is permitted to rise. Then, if the support is not properly applied, it slips upwards and forces the intestines down and out upon the relaxed tissues which are so well (*un*)supported (?) by the binder.

Is the binder a safeguard against flooding? Direct or somewhat severe pressure is required to check hemorrhage from any large, bleeding surface, but that cannot obtain in a moving, globular body in a capacious cavity, unless a compressor is applied, and then pain supervenes, either from the

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uterus, the rectum, the bladder, or other structures upon which the pressing force is exerted. But, it will be remarked that the uterus contracts by virtue of a *vis a tergo* inherent in itself. True again; but why apply a bandage at all? It does *not* cause contraction; it does *not* guard against relaxation, consequently, does *not* prevent flooding. It does produce irritation; may interfere with the circulation, and produce flooding by constriction. Then, in the name of common sense, for what is the binder used? For an ornament? (!) No; ornaments are worn in more appropriate parts of the body!

An enemy in ambush decimates its assailants, and an army may be destroyed by a hidden foe. Such an ambuscade is the obstetric binder, behind which hemorrhage may destroy the patient unperceived. The binder is useless in exhaustion as well as relaxation, etc.; hence, it is worse than a scare-crow of straw, and is a positive detriment to the patient as well as the attendant. Facile examinations are hindered by the binder's presence, for the obstruction must be put aside when careful manual exploration is made. *Ergo*, the binder is useless. Long live the person who invented it!

I have seen cases of terrific flooding, yet there was no show externally of hemorrhage, save the blue lips, pallid countenance, feeble pulse, etc., and fainting, or syncope. The patient's belly was tightly bandaged by the midwife, but the bandage had become displaced upwards, and the uterus was fully relaxed and full of fluid blood. The attendants stated that the obstetricist had assured them that no danger threatened, but the transcendental binder slipped up and pressed the blood down! The bandage, *in situ*, may permit relaxation and flooding, as I have observed in one case.

In my last forty cases I was divorced from the binder, and have no cause for regret. The patients did not suffer by its absence. There was no tenesmus, no binder's pain, no ambush; there was no indication of hemorrhage. After the patients are allowed to ambulate, a supporter, bandage, or binder may be allowed to support the abdominal parietes comfortably. If the bandage is noted for its absence during the lying-in period, the patient can be watched and examined without inconvenience, or she can be instructed to make frequent examination, observing that the globular uterus remains well contracted, and should it relax there is time for instant action. Safety lies in a well-contracted uterus, danger in relaxation. Absence of the customary binder causes greater watchfulness, and prevents needless annoyance and loss of time. The blood is the life, and "eternal vigilance is the price of it."

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ART. VI.—RUPTURE OF THE UTERUS.

BY D. W. MOORE, M. D., OF WAUPUN.

By reference to the transactions of 1876, may be seen a case reported by me of rupture of the uterus, with recovery. After the lapse of about five years the lady, Mrs. E. G., became pregnant again, and bespoke my services for the occasion. I made all the necessary preparations for the giving away of the old cicatrix, and waited developments. I was summoned on the twenty-third of September, 1880. The labor progressed finely until in the last stage, and I began to think we were going through it in fine style, when I was startled by a spring, a sharp cry, and an exclamation of "there it goes;" and, sure enough, it had gone. A slight rigor, no more contraction, and the little tumor just below the umbilicus told me plainly that I had again a rupture of the uterus to deal with in the same person.

There did not appear to be as severe a shock to the system, and consequently not so much prostration as when the rupture occurred the first time. Dr. Butterfield was with me in a few minutes, the forceps applied, and, as soon as possible, the fœtus removed. Then, with Dr. B. holding the uterus in position, I passed my hand up and removed the placenta. Upon introducing my hand again for exploration, I found a loop of intestine lying in the vagina, reaching nearly to the vulva. This I seized in my hand and carried through the rent, and deposited it as near as possible where it belonged. I then turned my attention to clearing the abdominal cavity. I removed several clots of blood, and, as I did not dare to remove my hand for fear of a return of the hernia, I had ample opportunity to examine the extent of the injury. At the time of the introduction of my hand the last time, I should think the opening was four or five inches in length, extending down into the vagina, allowing my hand to pass freely through it.

Upon the first appearance of a contraction, I withdrew my hand, and left nature to close the opening as much as possible. After placing her in bed, with her shoulders elevated to facilitate drainage, we administered a full dose of morphine, with orders to repeat every three hours, and left her for the night.

Sept. 24.—11.40 A. M., pulse 96, temperature 102½; slight tympanitis; 8.20 P. M., pulse 98, temperature 101½; symptoms same as in morning, except nausea from drinking water.

Sept. 25.—4.30 A. M., pulse 92, temperature 101½; 7.30 A. M., pulse 92, temperature not taken; 5.00 P. M., pulse 100, temperature 102; bloating increasing; restless; hiccough.

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Sept. 26.—8.40 A. M., pulse 94, temperature 101¼; patient quiet, bloating about the same, does not complain of pain except from piles; 6.00 P. M., pulse 94, temperature 101¾; quiet; has vomited several times during the day.

Sept. 27.—7.45 A. M., pulse 102, temperature 102; vomits frequently; complains of pain in the right side; 6.00 P. M., pulse 104, temperature 102½; quiet, but vomits occasionally stercoraceous matter.

Sept. 28.—8.00 A. M., pulse 104, temperature 102½; has not vomited since nine o'clock last night; bloating less; cheerful; 7.30 P. M., pulse 95; no pain. Ordered enema; bloating much less.

Sept. 29.—9.00 A. M., pulse 96; 6.00 P. M., pulse 100; patient improving; moved bowels by enema.

Sept. 30.—Still mending; appetite good; bowels moved naturally.

From the last date I have no notes of the case, and made only occasional visits. A few days later when I called I found her sitting up, and before the end of October she walked two blocks to witness a torchlight procession.

Mrs. G. is now in fair health, but not as robust as she was previous to her last confinement.

I do not report this case because it is either new or remarkable, only in her recovery after two as severe shocks as rupture of the uterus. I think our success due mainly to the promptness with which the assistance was rendered, a cheerful and hopeful disposition, and her tolerance of opiates, she having taken one-half grain or more of morphine, or its equivalent, every three hours for nearly two weeks.

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Art. VII.—SIX CASES OF STERILITY.

By R. M. Wigginton, M. D., of Watertown.

In accordance with the requirements of this Society, I take pleasure in reporting the following cases, treated and managed as hereinafter mentioned:

As is well understood, the process of fecundation is brought about by the union of the seminal fluid with the ovule. Any cause interfering with this intricate process will result in sterility.

First, the seminal fluid may not be able to enter the uterus, or its vitality may be destroyed while in the vagina or uterus, by coming in contact with some abnormal secretion.

Second, the ovule may not enter or pass the Fallopian tubes; it may be destroyed while in the uterus; it may not remain long enough within this organ to become fecundated; or, quite possibly, it may be dislodged from some cause before or soon after impregnation has taken place.

Again, various abnormal conditions of the reproductive organs may be present to bring about this unnatural state of things.

And first of all will be mentioned chronic inflammation of the uterus, either of the cervix or body, which may involve either the parenchyma or mucous membrane of the organ, or both.

Next in frequency will come that hyperæsthetic condition of the sphincter vaginæ, called vaginismus.

All the various forms of versions and flexions will come as a third cause.

And finally come all those congenital omissions, such as absence of the vagina, the uterus, the tubes, and the ovaries. When one or more of the above conditions be present, sterility will be very likely to follow.

As the reports of cases are the most instructive, I will now proceed to give them as briefly as possible.

Case I.—Mrs. A, aged thirty-two, born in the United States; German descent; nervo-bilious temperament, medium height, spare habit; married ten years; never conceived; desires a family.

I first saw this lady in December, 1878, when she came to my office for treatment. In conversation with my patient, I gleaned the following history: Naturally active and domestic, never strong or robust, began to menstruate at fifteen. Married at twenty-two, from which time her menses had been irregular and painful, with leucorrheal discharges during the intervals; bowels constipated; and during the menstrual flow

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usually suffered from an intolerable headache, often leaving her in a state of melancholy. Sexual commerce always painful, for the last two years almost intolerable, and now impossible. Even the passage of blood clots, of which there are many during the menstrual flow, causes the most intense agony. Has been treated by two or three physicians with temporary benefit. Complains of great pain on walking or riding. External examination discovered tenderness of both ovaries and the uterine region.

On attempting the vaginal touch, it was found that the least effort produced the most excruciating pain. The tip of the finger, even, could not be introduced without producing an instant spasm of the sphincter, the reflex sensitiveness was so great. I prescribed a laxative pill daily, freedom from all excitement, to bathe the parts in a solution of tannic acid and tincture of opium, and an ointment composed of two grains of sulphate of atropia and four grains of sulphate of morphine to one ounce of rose ointment, to be applied to the parts twice daily.

Dec. 19.—Called at office, feeling more comfortable. On examination found the ointment had done good service, there being less tenderness. The finger could be passed, but with considerable difficulty and pain. Directed my patient to return home and continue treatment.

Dec. 24.—Visited patient; introduced vaginal tent; to be kept quiet on her back until next morning, then to remove the tent and continue the treatment.

Dec. 26.—Another large vaginal tent introduced; and again Jan. 2d, 1877, 6th and 10th, causing no undue pain. (These tents were made by myself, with clean white sponge carefully wrapped while in a carbolized solution of gum arabic, containing also atropia.)

Jan. 15.—Called at office; a small speculum was passed, giving much pain, and immediately withdrawn. Had had one painful copulation. The ointment was continued, and the tents used every other day until a thorough vaginal examination could be had, when the cervix was found elongated, pointed, the external os indurated and projecting considerably to the front. Behind the cervix and upper part of the posterior wall of the vagina could be felt a hard body about the size of a small fist, movable and tender to the touch. Per rectum, this tumor could be easily made out. I then examined my patient with the aid of the speculum and probe. The latter could be passed only about half an inch, when it suddenly stopped, and no curve of the instrument would induce it to pass further.

Here was evidently a case of vaginismus, retroflexion, and chronic corporeal metritis, of long standing, the former only partially cured. I again left my patient with a large tent in the vagina, and with directions to continue the ointment. Two days subsequently I visited her, and while under the influence of a mixture of bromide of potassium, morphine, and hydrate of chloral, I succeeded, after a while, in reducing the uterus to its normal condition.

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I immediately applied a medium-sized Hodge pessary, kept her quiet, on her back, and under the influence of the above mixture for a couple of days; at the same time directed the constant application of hot whisky and water.

Considerable excitement followed, but it was soon reduced.

On the tenth day following she came to my office, feeling much better. Upon examination, I found slight vaginismus remaining, but the uterus was in position and the pessary well up, and giving no inconvenience. I then removed the pessary, and examined her by speculum. The os was still hard, and the cervix elongated and pointed. As before, the probe could be passed not to exceed half an inch. So far as could be ascertained, the cervical canal seemed to be cartilaginous in character, evidently the result of former caustic treatment.

Re-applied pessary, sent her home, and directed her to continue the ointment, and to use hot water vaginal injections twice daily, while on her back, each to last ten minutes. Three days later, menstruated, passed some clots, less pain, lasted four days. Pessary "fell out." (?)

Feb. 17.—Visited my office; less pain; walks and rides with more comfort; uterus less sensitive; no difference in cervix; still points slightly to the sacrum and somewhat bent upon itself. Neither small or large probe could be introduced further than half an inch. Again sent her home and directed her to continue treatment, promising her a visit in a few days.

Feb. 22.—Visited my patient according to agreement, and conceiving the idea that the canal might be tortuous, I bent the probe accordingly giving it a spiral twist, and, to my great delight, passed it up to the fundus. The cavity of the body was found to be small and slightly tender to the touch. I then oiled a small tent, and watching carefully the withdrawal of the probe, with the forceps succeeded in passing it nearly the whole length of the cervical canal; introduced a tampon, and left her quietly in bed.

Feb. 23.—Has had slight pain; removed tent, applied another, and again left my patient. This treatment was repeated regularly at intervals, until the canal was quite large, and the tent could be passed up to the fundus. Just before, during, and immediately after each menstrual period the applications were omitted. Continued the treatment during March, April, and part of May, when the case was left to nature, hip-baths, and vaginal irrigation. Reported from time to time, much improved, each menstrual period less painful, copulation complete.

May 19.—Visited her in much pain in pelvic region, having taken cold from exposure; prescribed usual remedies.

June 17.—Visited her again, owing to an attack of intermittent fever.

Aug. 4.—Called at my office, growing worse again; probe with difficulty enters the cervical canal; os still indurated, contracted; cervix elongated and bent backwards upon itself. The tents were again used a few times, and Aug. 14th, 1879, while pretty well under the influence of chlo-

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ral, morphine and bromide potassium, and the sensitiveness of the parts further deadened by the local application of carbolic acid and glycerine, equal parts, I performed a modification of Sims' operation for the relief of my patient, cutting with a scissors completely through the anterior lip so far up as to include the stricture and tortuous part, and then, with a common blunt-pointed bistoury, severed the mucous membrane only of the posterior lip, including the cicatrix. She complained of very little pain, in fact, she did not know the exact moment it was done. She was placed under proper after-treatment, and the parts healed, leaving the canal quite pervious.

Dec. 22.—Husband reported his wife as doing well.

Feb. 24, 1880.—The patient called at my office for her tonic, apparently in the family way between two and three months.

April 10.—Husband called at office; says his wife is surely pregnant nearly five months.

She was subsequently confined, and is now pregnant again.

CASE II.—Mrs. A., aged thirty, German by birth, lymphatic temperament.

March 6, 1877.—Was called to see this lady. Found her in bed, in a semi-hysterical condition; not feverish; bowels constipated; urinating frequently; ovaries painful; just completed her menses; uterus large and tender; constant catarrhal discharge; lips of os large and soft; cervical canal indurated and roughened, and apparently drawing the os externum up, giving it a marked concave appearance. The lady had been twice married,—to first husband eight years before, by whom she had one child a year subsequent. Always troubled at menstrual periods since, finally incapacitating her for all duties. First husband died four years ago; married again the following year. Desires a family; sexual commerce perfect. This patient was treated with vaginal irrigations of hot water, holding in solution, from time to time, chloride of sodium, carbolic acid, persulphate of iron, etc., as the case required, until all the more acute symptoms were reduced. The cervical canal was then enlarged by semi-weekly introductions of carbolized tents, every other time passed to the fundus. This treatment seemed to have the effect of curing the inflammation, but not the cervical canal, for when the tents were finally withheld the canal contracted to its former unnatural condition, allowing the probe to pass with much difficulty.

July 17.—Visited my patient, and, while partially under the influence of ether, with a long, narrow bistoury passed by the side of the probe, I laid open the canal completely, cutting anteriorly through all the cicatricial tissue. I then cut through the posterior lip, including only the mucous and submucous tissues. The parts were then bathed with warm carbolic acid water; and as there was present very little pain and no irritation, a tent was passed and a tampon of carbolized cotton inserted into the vagina. Next morning, removed tent, bathed the parts, and applied belladonna ointment.

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July 20.—Applied another tent.

July 24.—Applied a third tent, and gave directions to bathe the parts twice daily with warm water.

July 31.—Menstruated freely; very little pain; feeling quite comfortable.

Aug. 28.—Growing stronger daily; no pain over ovaries or uterus. Walked to town to-day; very little leucorrhœa.

Sept. 20.—Saw her the last time to-day. Skipped her last menstruation. Appeared to be pregnant. Soon left the State.

April 29, 1878.—Was confined, and is since doing well.

CASE III.—Mrs. N., aged thirty-three, married two years; desires a family; sexual intercourse perfect; spare habit; nervo-bilious temperament; menstruation is quite regular, but painful; passes many clots; ovaries give her much pain.

March 25, 1878.—This lady came to my office to consult me because of her inability to bear children. Upon examination I found my patient to be suffering from chronic cervical metritis, of ten years standing, according to her own statement. Pain at each menstrual period excessive, especially in the ovaries. Probe passes with difficulty and much pain. This case was treated for several weeks with vaginal irrigations of hot water twice daily, until most of the active symptoms disappeared. After this a sponge tent was passed twice a week, gradually increasing the size of the canal until a cure seemed to be accomplished. These tents had the happy effect of subduing all remaining inflammation and engorgement. The tents were used about four months, when she called for the last time and reported herself cured. August, 1879, was confined. Since doing well.

CASE IV.—Mrs. B. came to my office Feb. 9th, 1879, for treatment. Irish by birth; marked lymphatic temperament; not thin, but flesh white and flabby. Anxious for a family; came to be treated because of this fact. Married less than two years. Sexual commerce perfect; menses irregular, scanty, painful; many clots; melancholic at times; much pain in top of head; constipated.

Upon examination the uterus was found to be partially retroflexed with chronic cervical metritis. The probe passed with much difficulty, giving a good deal of pain. This case was treated with large doses of iron, hot water irrigation, with chloride of sodium in solution, pessaries, and the application of graded sponge tents, introduced twice weekly for nearly three months.

May 10.—Called at office and thinks herself about well. Melancholia gone, and last mentrual period passed easily and almost painlessly; no clots.

June 9.—Passed her last menstrual period unnoticed. Jan. 18th, 1880, was confined of a large healthy boy.

P. S.—She recently called at my office and reports herself again pregnant.

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CASE V.—Mrs. G., aged about thirty-one; short; not robust; German birth; nervous and irritable; hysterical at times; and especially so at menstrual periods. Married eight or nine years; never conceived; very desirous of a family. This lady came to my office May 8, 1877, for the first time for treatment, complaining more especially of her "fits," as she termed them.

She was unable to work or stand on her feet long, and walking or riding gave her a great deal of pain in the pelvic region and back; always complained of headache and constipation. She informed me this condition had lasted a number of years, and all her symptoms were much exaggerated during each menstrual period, when she was usually confined to her bed for several days, often passing clots of "liver-blood," as she described it. Her menses were irregular, often coming on suddenly, with the passage of a clot and a rapid flow of blood following. Had received no treatment previously. I informed her what I deemed her condition to be, and advised an examination, to which she readily consented. I found the abdomen puffy, and very tender over ovaries and region of uterus. Per vaginal touch I found the parts tender, swollen; and roughened; the uterus very sore; movable to a limited extent; nearly as large as the double fist, and moderately well up. The uterus was found to be much enlarged and elongated, the probe readily passing up the neck and body to the extent of fully four and a half inches. Gentle manipulations of the probe brought away a little blood, but the organ was not as sensitive as external pressure would indicate. The entire organ was engorged, swollen and inflamed, and the surrounding pelvic tissues more or less involved. In brief, this lady was treated with quiet, rest on her back part of the time, laxatives, bromides of ammonium and potassium, and hot water irrigations with sulphate of aluminum and chloride of sodium in solution. After the more active conditions of the disease were reduced, I began the application of sponge tents, inserting one every second day, every other tent to be carried up to the fundus. The former treatment was still continued. She bore the application of the tents well, and it had a very excellent effect. She improved in general health; could ride and walk with much more ease; the uterus reduced to less than half of its former dimensions; very little pain in menstruating; and doing all the light work of the house. August 10th, after thorough examination, found all the parts progressing well. She left my office at this date, and did not appear again until Oct. 25, 1878, being absent over a year.

For the last three or four months has had a good deal of pain during menstruation. Upon examination, I found the body of the uterus apparently in health and position, but the cervix and canal much indurated and bent upon itself, to a certain degree, posteriorly. I afterwards visited my patient, and passed up the canal as large a tent as possible, and the next day slit up the cicatricial tissue anteriorly and posteriorly. This was done without an anæsthetic and gave some pain, but she stood it well.

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After this, I heard from her from time to time for a couple of years, during which time she was feeling quite comfortable, and doing most of her housework. As to the sterility, she continues unchanged, the treatment having had no effect.

CASE VI.—Mrs. F., aged thirty-four, born in United States; Irish parentage; spare habit; nervous. Married two years; sexual commerce perfect; desires a family; menstruation irregular; painful; clots. Upon examination, found tenderness over ovaries, but none over uterus. Per vaginal examination, I found the uterus nearly in position, but the cervix indurated and elongated, with the canal contracted and roughened, the probe passing with some difficulty. In August, 1878, I introduced a tent, and the following day slit up both lips of the cervix after the manner of Sims. I saw my patient a few times after this, when she and her husband suddenly went west. Subsequently I heard from her, with the statement that she was six months in the family way.

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ART. VIII.—REPORT ON NEW REMEDIES.

BY J. G. MEACHEM, JR., M. D., OF RACINE, CHAIRMAN OF THE COMMITTEE.

It is plain, from the outset, that the collected material of this report must not only include remedies that are actually new, but must embrace such applications of old remedies as are new, when compared with their former uses.

Fully one-half of the new things of to-day were new once before, perhaps thirty, or forty, or fifty years ago; but they are new now because of some better understanding of their therapeutical action; or because the chemist's science has brought forth from the old a new element; or from the single one there have been derived, by chemical manipulation, several active and potent principles, which, when used independently and free from the modifying or perverting influences of their associated elements, become agents of power and usefulness; thus presenting remedies that are really new, as well as placing the old one in a new light for new uses and new virtues.

The world of to-day is trying to find something "new under the sun," and individuals in the profession of medicine, as well as in other professions, are ever on the alert to discover, and to apply for use, new elements that shall add to or complete respective chains of therapeutic action. For instance, who has not wished, from the bottom of his heart, time and time again, that in the long list of remedial agents, both old and new, there might be one which shall produce all the benefits of opium without bringing along with it the disagreeable after-effects. The finding of such an agent would indeed supply a missing link. Or, who has not desired some remedy to prescribe for the cough of phthisis that will give relief without compromising an already enfeebled appetite. Such a one would supply the link of restfulness. Wants like these prompt conscientious minds to investigate the old as well as the new, for the single elements that have special and definite effects.

The enthusiast at the present time, tells us that Jamaica dogwood supplies the needed effect of opium; and that oxalate of cerium will soothe the troubled rest of the phthisical patient.

Atropine has been, in its special way, as valuable as any other remedy at our command, but it had its drawbacks and objections. Ten days were required after its use, for the dilated pupil to regain its natural size. This time, in many instances, was a serious loss. But now, by that spirit of investigation and experiment, from out of that very same substance a new substance has been formed, which possesses all the power of the

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other upon the eye, and allows the pupil to regain its size within a very few hours. The link here is already supplied.

The same idea of want applies to anæsthesia. The great want is an agent that does not depress and paralyze like chloroform; that does not stimulate and make restive like ether—the happy go-between that will do what you want it to do, without having connected with it the condition of danger.

The spirit of discovering and applying in this specific direction is probably more active now than ever before. It begets enthusiasm, which developes hobby, and so it happens that many things are forced upon our attention by experimenters and pharmacists, which, after a time, in the trial test of practical utility, are shown to be utterly worthless.

HYDROBROMIC ETHER.

This is a new anæsthetic, which, during the past year, has received the attention of the profession in all parts of the country. This agent is a colorless liquid, of peculiar odor, intermediate between chloroform and ether in density; its vapor is not irritating to the air passages, but the ethereal odor remains in the patient's breath some time after its use.

It was discovered as long ago as 1827 by Serullus, but attracted no special attention until 1849, when Dr. Nunnelly, of Leeds, England, made some experiments with it on animals. It was again brought before the profession in 1865, but seems to have received no attention. In 1876, Rabuteau experimented with it on the lower animals to demonstrate its anæsthetic properties, and the result of these experiments led Dr. Turnbull, of Philadelphia, to employ it on the human subject in 1877, using it first on himself, and then on his patients. In 1879, Dr. Levis became interested in it, and to the united efforts of Drs. Turnbull and Levis, the profession to-day owes its knowledge of the anæsthetic properties of this agent. Its greatest advantage is that it produces anæsthesia more quickly than any other agent, and that the after-effects are less protracted than from ether or chloroform. It is best administered (according to Dr. Levis) on a small napkin, folded about four inches square, laid under a larger napkin, which shall cover the patient's face. It produces anæsthesia in about three or four minutes; and consciousness returns in about the same length of time after its administration ceases. There are already many favorable opinions concerning it, and also many reports of cases in which it has been used without satisfactory results.

Dr. Marion Sims* writes quite extendedly in reporting two cases in which it was wholly unsatisfactory, with fatal effects in one of them.

Dr. C. F. Gay, of Buffalo, says, "It required eleven minutes to bring the patient under its influence, and nine drachms were used. Its odor was very disagreeable, and its effect evanescent. Another patient, a very strong man, just as he was coming under its influence, became excited, violent, and unmanageable, and sprang from the table and escaped to his bed.

*The Medical Record, April 3, 1880.

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Dr. Maclean,* of Ann Arbor, in speaking of a patient upon whom he was trying this anæsthetic, says: "His head was drawn violently backward and his whole muscular system jerked spasmodically. The breathing was rapid, and the pulse small. It appeared to the gentleman who was administering the agent, and to myself, that the symptoms were, to say the least, unsatisfactory, and so chloroform was substituted.

Dr. Wilkinson,† of Galveston, thoroughly anæsthetized his patient in three minutes, and had barely begun his operation when the pulse ceased altogether; the face became blanched, and the breathing stopped short. The patient was fortunately restored by Nitrite of Amyl, after which the ethyl was continued, but not crowded. The anæsthesia was not satisfactory, and vomiting began and lasted five hours.

Dr. J. C. Reeve,‡ of Dayton, tried its effects upon himself with specimens from two different manufacturers. In the first trial the pulse became more or less irregular, and there was some nausea, though the symptoms of anæsthesia were manifest after the second respiration. In the second trial there was no irregularity of the pulse, and total unconsciousness in one minute. At the end of three minutes all effects were gone. In a trial on a patient there was much talking and uneasiness, muscular rigidity, and a sort of tetanic spasm of the chest—altogether bad symptoms. Thirteen drachms of the ethyl were used without producing sufficient relaxation to make an operation.

Dr. John C. Moore,‖ of Chicago, considers it a disappointing, as well as a dangerous, anæsthetic, and cites two cases in the practice of A. R. Jackson, in both of which the respiration became labored and difficult, face livid, veins greatly congested, and there was general excitement of great power.

The principal recommendations are as yet from Philadelphia, where it has been used about three hundred times successfully. The general understanding of its value at the present time is that for short operations (less than half an hour), it is to be preferred to ether or chloroform, probably because of its general quick action and rapid elimination from the system.

Dr. G. B. Bullard,§ of St. Johnsbury, Vt., speaks favorably of it in short operations.

Dr. H. S. Gœtz,¶ of Marshalltown, Iowa, has used it with satisfaction in obstetric practice.

M. Périer,** of Paris, employed it several times as a local anæsthetic with success, and Terrillon†† claims several advantages for it over ether

* Medical Record, July 17, 1880.
† Medical Record, May 15, 1880.
‡ Chicago Medical Journal and Examiner, June, 1880.
‖ Chicago Medical Journal and Examiner, Aug. 1880.
§ Medical Record, May 15, 1880.
¶ Medical Record, May 29, 1880.
** La France Medicale, March 27.
†† Bulletin general de Therapeutique.

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for the same purpose. Its vapor is not inflammable, and therefore it can be used at night, and actual cautery can be applied in its spray. An impure article should not be used.

ETHIDENE.

The bichloride of ethidene is attracting some attention as an anæsthetic. It is a liquid resembling chloroform in appearance and smell. The formula of its chemical constitution is given C^2, H^4, Cl^2 A committee appointed by the British Medical Association have experimented with it somewhat upon animals. In frogs and rabbits the anæsthetic condition was produced in from four to five minutes, and in dogs, in from two to three minutes. There was but slight depression of arterial pressure, the heart beating steadily all the time. When chloroform was substituted, the effect upon cardiac action was very marked.* When administered to patients there was no injurious effect upon respiration, no indication of asphyxia, the heart's action was unaffected, and anæsthesia was promptly produced and complete.† Dr. W. B. McLeod, of Edinburgh,‡ has lately administered ethidene in nitrous oxide gas, the patient inhaling the two agents together. The time of inhalation was one minute, and the period of anæsthesia about two minutes. He has used it sixteen times in dental surgery with the best results.

IODIDE OF ETHYL.

This remedy for asthma and spasmodic affections of the lungs has lately been urged upon the profession for a thorough trial, to be judged on its merits. Its discovery dates back to 1815. It was proposed as a medicinal agent in 1850, but was laid aside until 1879, when Prof. See, of Paris, employed it in a number of cases of dyspnœa, with efficient relief. About the same time it was used in the Victoria Park Hospital, London, with success. In this country, Dr. Robt. M. Lawrence, of Boston,‖ has used it quite extensively and systematically during the past fifteen months. "It is normally colorless, but on exposure to light becomes a reddish-brown, owing to a separation of the iodine and ethyl. Its odor is like that of chloroform, and its taste sweetish." It is used by inhalation, from a few drops on a handkerchief, or from a small vial containing it. Its absorption is rapid through the respiratory mucous surfaces, and in ten minutes after it has been inhaled, iodine has been detected in the urine. "It has a certain influence over the respiratory function, and relieves certain forms of dyspnœa. It is said to have no anæsthetic effect, but is an agreeable exhilarant, promoting a greater facility of respiration, which lasts several hours, and a free mucous secretion in the air passages. Spasmodic asthma, nervous dyspnœa, and the dyspnœa of bronchitis, are benefited by it.

*Dr. Reeve, Dayton, Ohio, in Chicago Medical Journal and Examiner, June, 1880.
†Ibid.
‡Medical Record, April 24, 1880.
‖Medical Record, June 19, 1880.

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NITRITE AMYL.

Dr. Kerr* calls attention to the use of nitrite amyl in uterine hemorrhage, the rationale of it being the rapid dilatation of the cerebral vessels, preventing anæmia of the brain, and collapse. In a case mentioned, the result was immediate and satisfactory, the patient being restored at once, and the hemorrhage ceasing.†

This remedy has out-lived fashionable novelty, and is generally accepted as being of great service in asthma, angina pectoris, syncope, etc. It increases the action of the heart, and relaxes the arterioles, almost instantly relieving such attacks as spasmodic asthma. It is beneficial in convulsions,‡ used by the inhalation of four or five drops on a handkerchief.

PILOCARPINE.

The use of this remedy in the form of the muriate has increased much during the past year. It is found that in the treatment of diphtheria much good results from this remedy. It is claimed that, although not a specific for the disease, it prevents the development of the membrane and organisms on which the production of the disease depends.

Dr. Geo. Guttman,‖ of Cronstadt, in a series of eighty cases, with no deaths, reports very favorably concerning it. He thinks the resulting secretion from the mouth and fauces removes the false membrane without injurious inflammation and without marked depression of the vital forces.

Dr. Lax§ also recommends it, upon an experience of numerous cases, some of which were unusually severe, and with no particular expectation of their recovery. All recovered, however.

Dr. Wendt,¶ of New York, gives three cases that recovered under its use, when other remedies had failed.

Dr. Griswold** reports, in the New York Medical Journal, six cases of malarial intermittent fever treated with this remedy. He uses it hypodermically, in doses of one-fifth grain, from fifteen to thirty minutes before the onset of the chill, which it promptly arrests. Its efficacy is confined to the cold stage. What seems remarkable is that the majority of the cases terminate without further treatment, after the thorough abortion of a single paroxysm with muriate pilocarpine. After observing its use in nearly one hundred cases, he feels justified in asserting that in the doses required in intermitting fever its action is unattended with danger or discomfort.

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* British Medical Journal, November, 1879.
† Chicago Medical Review, Sept. 5, 1880.
‡ Dr. Pitkin, in Medical Record, Oct. 2, 1880.
‖ Medical Gazette (N. Y.), April 30, 1881.
§ Ibid.
¶ Medical Record, April 9, 1881.
** American Practitioner, September, 1880.

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Dr. Pujesz,* of Buda-Pesth, Hungary, used muriate of pilocarpine in a case of poisoning by atropia. He injected, hypodermically, every five or ten minutes, one centigramme of the medicine, giving altogether in this way about sixteen centigrammes. Under this treatment, the toxic symptoms disappeared, so that at the end of three hours the patient was quite recovered.

This remedy is receiving considerable attention in the treatment of chronic skin diseases, and, according to reports, in some instances marked benefit has been obtained.

PICROTOXINE.

This alkaloid is the active principle of the *cocculus indicus*. It is soluble in one hundred and eighty parts of water. The dose is one-one hundred and eightieth grain to one-sixtieth grain four times daily. Dr. Wm. Murrell† claims good results from it in the treatment of night sweats of phthisis, the sweating being practically checked by the third or fourth night.

ERYTHROPHLEINE.

This new drug is the active principle of the bark of *erythrophleine quineense*, and is an alkaloid of powerful toxic effect upon the heart. Experiments to ascertain its physiological effects have been undertaken by Drs. G. See and Bochefontaine,‡ Paris. As yet, but little is known of its therapeutic action.

RESORCIN.

This substance is derived from phenol, and was discovered several years ago by Hlasiwetz, in Vienna. The prismatic crystals of resorcin are colorless, and in the dark exhibit phosphorescence upon friction. It dissolves readily in water and in all other liquids except chloroform and bisulphide of carbon. It has an odor not unlike that of carbolic acid, and a taste equally peculiar.

Dr. J. Andeer, of Wurzburg, studied its therapeutic value during last year.‖ He finds its antiseptic properties in every way equal to those of carbolic acid. "In febrile conditions its administration produces a rapid and considerable lowering of the temperature, which exceeds that of quinine and salicylic acid; but this effect is of short duration."§

Prof. Lichtheim, of Berne, supplements the study of Andeer by a series of clinical observations, which show it to have a decided antipyretic effect. "A dose of two or three grammes produces, after a few minutes, vertigo, tinnitus aurium, facial congestion, an accelerated respiration, and an increased pulse-rate. In ten or fifteen minutes perspiration begin, and about twenty minutes later the patient is bathed in sweat.

* Chicago Medical Gazette, April 20, 1880.

† Chicago Medical Gazette, Feb. 20, 1880.

‡ Medical Record (from La France Medicale), Aug. 20, 1880.

‖ See translation, in the numbers of the International Journal of Medicine and Surgery, April, 1881.

§ The Medical Record, Nov. 13, 1880.

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About one hour after its administration the patient's pulse and temperature are normal."* It is not always constant in its effects, for sometimes there is excitement and delirium preceding its febrifuge action. Lichtheim thinks that if we should succeed in doing away these unpleasant symptoms, resorcin would soon become as widely known and used as quinine and salicylic acid."† This substance has been employed in cholera infantum, with the claim that it diminishes vomiting and diarrhœa, and restores the function of the stomach. The commencing dose should be one and one-half grains, in some slightly bitter menstruum.

HOMATROPIN.

This is a new alkaloid made from atropia. Prof. Ladenburgh, of Kiel, is the discoverer. He found that atropia could be divided into tropine and tropic acid. Tropine, treated with amygdalic acid, produces this substance. The best salt for practical purposes seems to be the hydrobromate, which is soluble in ten parts of water. Dr. Henry Schell,‡ says that the hydrobromate of homatropin, has two important spheres of usefulness: first, as a mydriatic, and second, as a suppressor of the accommodation. "With regard to the visual exploration of the eye, homatropin is the most useful drug yet known. One drop of solution, of the strength of one grain to the fluid drachm of distilled water, placed inside the lower lid, has a perceptible effect on the pupil within ten minutes, and in less than half an hour the dilation is completed. The pupil commences to decrease again in about two hours, and in ten hours is restored to its original size."

It is not applicable to the treatment of ocular diseases, as in many cases it causes slight irritation of the conjunctiva. It will not supersede the use of atropia in iritis, where a continuous dilation of the pupil is a necessity, because of its impermanent effect.

Drs. Tweedy and Ringer have experimented with it, and consider its effect on the iris very powerful while it lasts. Its great advantage is that its effects soon pass off.‖

Dr. Fronmeller (*memorabil*)§ finds the same beneficial effect from its use in dilating the pupil that other observers have found. Dr. W. Cheatham,¶ of Louisville, confirms the experience of others in a very favorable mention of it. Dr. F. C. Holtz,** of Chicago, says: "It should be employed in lieu of atropia, whenever we wish to dilate the pupil temporarily, for the purpose of ophthalmoscopic examinations, or whenever we wish to suspend the accommodation in testing the eye for certain anomalies of refraction. It saves time and prolonged inconvenience to the patient, as its effects pass off so quickly."

* The Medical Record, Nov. 13, 1880.
† Ibid.
‡ Specialist and Intelligencer, Dec. 1, 1880.
‖ Medical Record (London Lancet), Sept. 4, 1880.
§ American Practitioner, Nov., 1880.
¶ Louisville Medical News, Feb., 1881.
** Chicago Medical Journal and Examiner, Feb., 1881.

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DUBOISIA.

This agent, as a mydriatic, is now about two years old in this country, and many of you are more or less familiar with it. Late research and experiment has shown it to be as valuable as atropia, but more powerful in its action. It dilates the pupil more promptly than atropia, and its effect passes off in about one-half the time required by that remedy. It is more apt to produce constitutional disturbance than atropia, and therefore requires more careful use.*

Dr. Ladenburgh, of Kiel, from personal investigation, is inclined to believe duboisia—the alkaloid—to be identical with hyoscyamin, daturin, and atropin.† However this may be, its action seems to be different. The physiological action, according to Epifanoff, of St. Petersburg, closely resembles that of atropia. The vaso-motor is first irritated, after wards paralyzed. The breathing is accelerated, but not by action on the respiratory centers. It dilates the pupil, paralyzes the muscular coats of the stomach, intestines, uterus, and bladder, and salivary secretion is depressed. Motor paralysis is produced by smaller doses than of atropia.‡

Dr. Robert Bartholow‖ says: "Duboisia is, I think, destined to take the place of atropia, as a remedy for the night sweats of phthisis, and for various nervous affections of the organs of respiration. It is superior to atropia as an hypnotic and anodyne."

Dr. Wm. S. Little, of Philadelphia, calls attention to the effect of duboisia, in relaxing the sphincter of the bladder, thereby allowing an involuntary act of urination.§

Dr. E. L. Holmes, of Chicago, reports a case of poisoning, where, by mistake, a patient swallowed a teaspoonful of a solution, one grain to one ounce. He rapidly passed into a state of unconsciousness without delirium, which lasted about eight hours. He complained for two days of muscular weakness in the legs and arms, and especially noted a peculiar jerking of the muscles of the arm, when extending it to grasp a glass or other object.¶ As a mydriatic, this agent is not so rapid in its action as homatropin.

A few drops of a solution of one and one-half drachms of duboisia extract to one ounce of distilled water, is sufficient to dilate the pupil. For internal use, after filtering a solution of ten parts duboisia extract and ninety parts of alcohol, five to ten minims is the dose.

SALICYLATE OF CALCIUM.

This drug is prepared by mixing two hundred and seventy-six parts, by weight, of salicylic acid, with one hundred parts prepared chalk.** This

*W. T. Norris, American Journal Medical Science.
†New Remedies, May, 1880.
‡Medical Record, March 5, 1881.
‖Therapeutic Gazette.
§Philadelphia Medical Times.
¶Chicago Medical Journal and Examiner, November, 1880.
**Medical Record, Oct. 30, 1880.

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will form three hundred and fourteen parts of the anhydrous salt. It is sufficiently correct to have eleven parts of the acid and four of the chalk. It is administered in syrup.

Dr. Alex. Hutchins,* of Brooklyn, finds that this remedy has almost a specific effect in serous diarrhœa, in infants, the observation being based on a series of twenty-seven consecutive cases treated in private practice. On a child two years old, he commenced by giving two-grain doses every hour. This was increased to five grains, when within half an hour the vomiting ceased and the temperature was reduced. The dose was repeated every two hours for four or five times, when the disease was under control. About the same result was manifest in all the cases, the dose being varied according to the age of the patient. "It was especially noted that the calcium salt had no appreciable effect on any one of the other forms of intestinal flux, lienteric or inflammatory. The serous diarrhœa alone seemed to be amenable to this drug."

Dr. Jerome Walker† (Coney Island), found the calcium so effective that he abandoned bismuth, as it was no more effective in controlling vomiting than the calcium. His prescription is, salicylic acid twenty-two grains, cretæ preparata eight grains, to be mixed thoroughly, and divided into six (or ten) powders, as directed, and given once in two to four hours.

SALICYLATE OF QUININE.

This salt is being used, with growing favor, as a remedy to reduce the fever and temperature in rheumatic and malarial fevers. Its full dose is three grains.

Dr. Hewan (in New Remedies) claims greater benefit from it than from salicylic acid or salicylate of sodium.‡ No injurious consequences have thus far followed its use.

OXALATE OF CERIUM.

This old remedy has been revived and brought to notice by several medical men since April, 1878, when Dr. Thos. Clark recommended it in chronic cough and shortness of breathing. Its effect seems to be sedative. Dr. Jas. G. LaRoe, Dr. F. Alport, Peoria, Ill, and Dr. Morje, of N. Y., report favorably of it in chronic laryngial cough, and in pertussis, with marked relief of the cough. Dr. H. Cheesman, in a paper read before the Medical Society of the County of New York,‖ gives his observations as to the effect of this substance; and to do this, reports eight cases of his own and a synopsis of thirty-one other cases, which were previously reported to the New York Therapeutical Society. They were mostly cases of phthisis, in which the cough was extremely distressing. Opiates were avoided, and this remedy substituted in doses of from five to ten grains,

* American Practitioner, October, 1880.
† Ibid.
‡ Chicago Medical Review, Oct 5, 1880.
‖ Medical Record, June 12, 1880.

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with marked relief in the majority of the cases. "The stomach is not disturbed as by opiates and other cough remedies, but, on the contrary, it tends to relieve nausea, and to improve digestion."

Quite recently a writer in the *Concours Medicale*, on the treatment to infantile cholera,* calls attention to its efficacy in relieving the vomiting, and says: "Without any exception, I have obtained rapid and absolute cessation of the vomiting." To children under two years of age, four grains are divided into ten powders, and one given every hour. For older children the dose is increased, and given in the same way. For adults, fifteen grains, similarly divided and administered, can be used.†

The chemically pure cerium oxalate, when precipitated from a neutral solution, is an impalpable powder, of a color nearly white or faint lavender.‡ "Its action is sedative, being exerted upon the periphery of the pneumo-gastric nerve."

HYDRANGEA.

This remedy, from an indigenous shrub, is not very well known. Though it has been recommended for the past forty years, its chemistry and active principles are not well understood. It has lately been brought forward as a special solvent of lithate of ammonia, and, consequently, is recommended in renal calculi. Dr. E. B Freeman, of Barton, Ala., sounds its praises, and proves its usefulness by giving cases where the calculi have disappeared under its use.‖ The dose is a drachm of the fluid extract, three times daily.

QUEBRACHO BARK.

This is one of the recent new remedies. It is derived from the *Aspidosperma quebracho*, a tree indigenous in the province of Santiago. The tree is large and beautiful, with glistening leaves, which do not fall in winter. The leaves contain 27.5 per cent. of tannin, but the wood contains very little (Hœhmel). Froude derived an alkaloid, aspidospermin, from the bark, which, in its properties, is similar to quinine.§ In its native land, the bark is used as a remedy against fevers, and can be prepared in various ways—as an infusion, a decoction, a tincture, an extract, or an elixir.

Dr. Fk. Penzoldt, of Erlangen, first introduced this medicine into Europe in the year 1878; and in experimenting with it in regard to its febrifuge action, he observed that instead of showing marked antipyretic effects, it had a very favorable influence in various forms of difficult breathing, by reducing the number of respirations.¶ This led him to experiment on animals, and in all, dyspnœa was shown in deeper and

* Chicago Medical Journal, December, 1880. (Quoted.)
† Peoria Medical Monthly, December, 1880.
‡ Medical Record, June 12, 1880.
‖ Medical Record, April 24, 1880.
§ Dr. F. Rohne, Virginia Medical Monthly, March, 1881.
¶ From his own words, as quoted by Dr. Rohne.

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slower breathing. He subsequently employed it on man, in various forms of disease, where difficult and rapid breathing was a prominent symptom. The best results were in cases of pulmonary emphysema and chronic bronchitis. He thinks it acts directly upon the blood, supplying power to absorb larger quantities of oxygen than usual. It has had trial at the hands of several physicians in Germany, with about the same results; and quite recently it has been used in England, by Dr. Berkhart, of London, with good success.* It was introduced into this country† only a short time ago, and, consequently, has not had extended trial here. The dose of the liquid extract is a teaspoonful.

MENTHOL.

"Menthol is the stearoptine of peppermint oil. It is a crystalline solid, derived from the oil by long keeping, or by being cooled to a low temperature. The American oil yields it at 0° C." Its chief source is from the Chinese and Japanese oils. It is very sparingly soluble in water, but in alcohol a solution is easily made; ether, glycerine, and the volatile oils, dissolve it quite freely.

A. D. MacDonald,‡ in a paper communicated to the Medico-Chirurgical Society of Edinburgh, January, 1880, urges the claims of this substance as a new antiseptic and antineuralgic agent. It is used chiefly as an external application along the course of the nerve affected. The relief is said to be quite immediate.

STIGMATA OF MAIZE.

Corn silk has been introduced to the profession as a demulcent and diuretic in catarrhal affections of the kidneys and bladder. In France, where it was first used, it seems to have been adopted pretty generally as a remedy of some value. It is said to produce diuresis rapidly, and to be well borne by the system for several weeks of continuous use, in the treatment of chronic affections.

Dr. Vanthier draws the following conclusions:‖ 1, "The action of maize is always favorable in all affections of the bladder, whether recent or chronic." 2, "Maizenic acid is the active principle of the stigmata of maize, and it alone contains the therapeutic properties." 3, "The diuretic action is not constant." * * * 4, "The best results are observed in uric and phosphatic gravel; in acute cystitis, whether simple or due to gravel; and in mucous or muco-purulent catarrh." 5, "In the cases observed by the writer, the ordinary remedies for these affections had been employed already without benefit, while the maize never failed to effect a cure. In connection with the maize, simple and medicated vesical injections were employed." 6, "The maizenic acid, moreover, has the power of dissolving calculi by its chemical action, and not only vesical

*British Medical Journal.

†By Parke, Davis & Co, Detroit.

‡Chicago Medical Review, August, 1880.

‖Medical Record, Nov. 37, 1880. (Archives Med. Belges.)

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calculi, but also all the other calcareous concretions that are met with in the human system. Hence, its use seems to be indicated in cases of gout and rheumatism, as well as in affections of the urinary organs."

"The preparations used by the author, were the infusion of ten parts of corn silk to one hundred parts of boiling water, with syrup *ad libitum*; dose, a tablespoonful every two hours; the extract in doses of one and one-half to three grains; and maizenic acid in doses of one-eighth of a grain, in pill or mixture." Parke, Davis & Co. make a fluid extract, of which the dose is one to two fluid drachms.

CHALMOOGRA OIL.

This is a product of the seeds of the *Gynocardia odorata*, a tree of many branches, with smooth ash-colored bark. It is a native of the Malayan peninsula, and extends into India. It flowers in April or May, giving out a very fragrant odor; and bears fruit which ripens in December. The seeds are known in India as chalmugra, and from them the oil is obtained by expression. The pure oil is clear, of a pale-sherry color, having the characteristic odor of the seeds.

Dr. John Moss,* in giving the chemistry of this oil, states "that it contains two acids in a free state, viz., palmitic acid, and a new acid, called by him gynocardic acid. It contains also hypogœic and cocinic acids. The proportion of the four acids in the oil is 81.11 per cent., and palmitic is presented in by far the largest amount. The chief interest centers around the gynocardic acid, now, for the first time, described as having a pale yellow color, and a melting point of 29.5° C." Dr. Moss suggests that the medicinal virtue may reside in the gynocardic acid.

The chalmoogra oil is recommended chiefly in leprosy, and, from the various reports of its use, there seems to be some reason to believe it to be somewhat beneficial; but it does not appear, thus far, that a single case has actually been cured by it. It is fortunate for the people, and unfortunate for the remedy, that the disease, for which this greatly-praised oil is recommended, is so rare.

It has been tried in cases of rheumatism, gout, neuralgia, toothache, and sciatica; applied externally and administered internally, but the relief expected from it has not been obtained.

Dr. Egan,† of Pulaski, Tenn, has tested its value in sciatica, claiming slight beneficial results.

This oil has a very unpleasant and disagreeable taste, and cannot well be administered except in capsules, containing from five to eight drops, which is the dose. It should not be taken when the stomach is empty.

GURJUN BALSAM.

This is the product of resinous trees of India, obtained from different species of dipterocarpus. It is obtained by making incisions into the

* New Remedies, November, 1879.

† Chicago Medical Review, June 5, 1880.

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trunk of the tree with an axe, so as to scoop out a good-sized cavity. In this cavity a fire is placed and kept burning until the wood is somewhat scorched, when the balsam begins to exude. It is afterwards allowed to settle, when a clear liquid separates from the thick portion. This balsam is really an oleoresin, as it yields a volatile oil, and leaves a resin behind.

Gurjun balsam, as a medicine, is used for the same purpose as copaiba, and has an odor somewhat resembling the latter. The dose is about the same as copaiba.

M. Vidal, in the St. Louis Hospital, Paris, first experimented with it in France, and his success with it in the treatment of gonorrhœa was more than satisfactory. The treatment lasts from ten to twenty days. It is better to employ it after the inflammatory stage is over.* In the female it is used as a local application, the vagina first being washed out with warm water; a plug of cotton wool, soaked in a linament of equal parts of balsam and lime water, is applied through a speculum, and the plug is then covered with a second one of dry wool, the dressing being renewed daily.†

CHIAN TURPENTINE.

This remedy has been brought forward as a cure for cancer, by Prof. John Clay, of Birmingham. He published, in the London Lancet, four cases of carcinoma uteri, treated by this remedy. "The bleeding was checked, pain and fever relieved, and the size of morbid growth diminished." Six grains of Chian turpentine, with four grains of sulphur, were made into two pills, and both administered every four hours during the day. This treatment was continued several weeks, when the patient's general health was much improved, and "the parts (morbid growth) feel ragged, and do not bleed on roughly touching them."

Dr. E. W. Andrews, of Chicago, observes that, in whatever way Dr. Clay prescribes this remedy, whether in pill form or in an emulsion, sulphur is combined with it, and suggests that, perhaps, too much praise has been given to the turpentine and not enough to the sulphur.‡

In the London Cancer Hospital it has had thorough and faithful trial, but with unsatisfactory results. Dr. Henry Morris says: "That after a long and careful trial, the conclusion forced upon me is, that as a cure for cancer, Chian turpentine is utterly worthless."‖ In the Middlesex Hospital, after careful use, it was found to be worthless.§ Some one has remarked that the great trouble thus far is, that no one in England is able to get the right kind of turpentine, except Dr. Clay. This suggests a lack of confidence in the remedy, and points faintly to its fate, which may be like that of cundurango.

"Chian turpentine is named from 'Chios,' one of the names of the

*Journal de Medicine et de Chirurgie, Dec., 1877.

†American Practitioner, October, 1880; from Bouchut's Annal de Therapeutique.

‡Chicago Medical Journal and Examiner, August, 1880.

‖New York Medical Abstract, March, 1881.

§Medical Record, Jan. 22, 1881.

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island of Scio, where it is produced. It is also found on the island of Cyprus, and is sometimes called 'Cyprus turpentine.' It is not the product of a coniferous tree, but of the *Pistachia terebinthus*, belonging to the natural order *Anacardiaceæ*, to which belong also the sumacs, poison ivy, and *Rhus aromatica*. Ordinary mastich is a resin in its physical and chemical qualities closely similar to Chian turpentine, and it is produced from a tree of the same genus, *P. lentiscus*."* The mastich can be used when the turpentine cannot be obtained.

PISCIDIA ERYTHRINA.

Jamaica Dogwood has been placed before the profession as a substitute for opium. The plant from which the medicine is obtained, is a small tree which grows in the Antilles, in the lowlands, on volcanic soil. The bark of the roots is the part used, which is gathered during inflorescence. "It is strongly acrimonious to the taste, and produces a burning sensation in the mouth and pharynx. The active principle is a resinoid, soluble in strong alcohol."† Water does not dissolve it. It is said to be a cerebro-spinal drug, expending its influence almost entirely upon the nervous system. Its effect is narcotic, but does not produce nausea or constipation. Its effects are prompt, but not so enduring as opium. The pupil is dilated and staring; the pulse is but little affected; and the secondary results are not so marked as from opium.‡ The sleep produced is said to be tranquil and refreshing. This remedy has now been tried by many physicians in practice throughout the country, and, from the favorable mention of it, it is undoubtedly a remedy of considerable value. Several cases have been reported in which it has been used as a substitute for opium, in the treatment of various neuralgias.‖

The tincture and fluid extract, are the preparations used. The dose is from twenty to sixty drops. In over-doses it is a powerful poison, and, therefore, should be used with great care. Dr. Isaac Ott,§ has made a series of experiments with this agent upon animals and man, and from his experiments we are shown that piscidia is a drug that produces death by arrest of the respiratory apparatus. I cannot do better than to quote the conclusions at which he arrives:

"Piscidia is narcotic to frogs, rabbits, and men."

"It does not affect the irritability of the motor nerves."

"It does not attack the peripheral ends of the sensory nerves."

"It reduces reflex action by a stimulant action in the centers of Letschenow."

"It produces a tetanoid state by a stimulant action on the spinal cord, and not by a paralysis of Letschenow's centers."

*Dr. Andrews, in Chicago Medical Journal and Examiner, Aug., 1880.

†G. W. Winterburn, in New Preparations.

‡W. H. Rouse. M. D., Therapeutic Gazette.

‖Medical Record, Sept. 4, 1880.

§Detroit Lancet, June, 1880.

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"It dilates the pupil, which dilatation passes into a state of contraction upon the supervention of asphyxia."

"It is a salivator."

"It increases the secretion of the skin."

"It reduces the frequency of the pulse."

"It increases arterial tension by stimulation of the monarchial vaso-motor centers."

"This increase of pressure is soon succeeded by a fall, due to a weakening of the heart itself."

"If the action of piscidia is compared with that of *chloral*, it is found that the former has no dangerous action on the heart like the latter, nor such an energetic action as the latter upon the respiratory apparatus."

"Compared with *atropia*, piscidia, unlike the former, does not paralyze the motor nerves; it does not paralyze the chorda tympani; it does not arrest the sudoral secretion; it does not paralyze the pneumo-gastric; and does not elevate greatly the arterial tension; but, like it, dilates the pupil."

"Compared with *morphia*, like it, it produces sleep, heightened excitability, spinal convulsion, general paralysis, and stimulation of the main vaso-motor center; unlike it, it dilates the pupil."

"In the use of this drug, I would like to add the caution, that its surface is pleasure, and its depth death."

ERYTHROXYLON COCA.

Of late, this medicine has had some attention because of its supposed value in the treatment of the opium habit. Its properties are tonic, stimulant, and nutritive, and the theory of its substitution for opium and alcohol is based on these, which are said not to be accompanied by any element that shall produce disturbance and depression of the nervous system.

"The plant is cultivated between five and six thousand feet above the level of the sea, in the warm valleys of the eastern slope of the Andes, where almost the only variation of climate is from wet to dry. It is a shrub from four to six feet high. The leaves are gathered three or four times a year, most abundantly, however, in March, immediately after the rains. The green leaves are called *matu*; they are carefully spread out to dry in the sun, and, when dry, the leaf is called *coca*."

In the country producing it, the natives eat it, thereby gaining vital energy and activity. Mr. Markham, who writes on coca cultivation, says he chewed coca very frequently, and experienced an agreeable, soothing feeling. He found that he could endure long abstinence from food with less inconvenience than he could otherwise have done, and, under its power, he was able to ascend mountain sides with lightness and elasticity.*

* New Preparations (from Druggist), June, 1881.

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Dr. G. H. Gray, in the Medical Brief, gives two cases of opium habit, successfully treated by this remedy. He remarks: "In erythroxylon coca we have a remedy which I am positive will cure the great majority of the victims of opium, but the physician must experiment a little in each case, so as to arrive at the proper dose needed by his patient. This remedy certainly does so far exalt and support the power of the whole organization, that great depression, following the gradual, or even sudden, withdrawal of the accustomed stimulant is not felt, or, is felt only to a small extent by the patient."

Dr. E. R. Palmer* gives two striking cases, both in the gravity of the habit and in the short time required to cure them, by the use of the coca. Dr. Huse,† of Rockford, Ill., also reports two successful cases. Several other favorable results from the use of this remedy are reported by various practitioners. There is this to be added, however, that thus far, not one of the reporters of cases mentions the means he has of knowing that the cures are really complete. If the knowledge is based upon the statement of the patient, it amounts to nothing, as in the experience of most men, the word of an opium-eater can never be relied upon when it concerns himself and his habit. I think it seldom falls to the physician to know that his patient, supposed to be cured, is so thoroughly removed from all possible opportunities of obtaining the drug, that he can state positively of the perfect cure. From the favorable reports, however, we may hope that in this agent there is an antidote to the opium habit. If *it* disappoints us, there is no other to fall back upon, as there is no known agent that can be used practically as an antidote to the slavish habit.

A fluid extract of coca is made, of which the dose is from two to four fluid drachms.

TONGA.

Tonga is a new remedy, introduced for the relief of facial neuralgias. It comes from the Fiji Islands, and is derived from several plants of unknown botanic origin. Portions of different plants are gathered and bunched together, probably in definite proportions, and the collection, when taken as a whole, receives the name Tonga. The active principles are not known, nor is it known which of the several plants is the important one. It is claimed that it possesses anti-periodic, anodyne, and sedative properties, having special control over neuralgias of the face.

Drs. Ringer and Murrill‡ praise it; and a few persons in this country claim beneficial results from its use. I cannot speak very favorably of it. I have used the fluid extract in fifteen cases of various forms of facial neuralgia, without satisfactory results, except in one case, which was permanently relieved within half an hour after taking the first dose of one drachm. The rapid relief in this case would be something remarkable, could I fully believe it to have been due to the remedy. As quinine

*Selected by Therapeutic Gazette, June, 1880, from the Louisville Medical News.
†Therapeutic Gazette, Sept., 1880.
‡London Lancet.

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had been prescribed during two days previous, I do not know how much credit belongs to the tonga, and how much to the quinine.

HOANG-NAN.

No one can doubt that this remedy came from China; its name makes that plain enough.

Hoang-nan is the bark of a "species of convolvulus, closely related to false augustura; and its effects should be analogous to those of strychnia and brucia." In its native country, it is used for the cure of snake bites, hydrophobia, and leprosy—quite a variety of affections. But little is known of it and its effects. It has had very limited trial in this country.

HYPODERMIC TABLETS.

This new form of remedies for hypodermic use was first suggested by Dr. H. A. Wilson, of Philadelphia, in October, 1880. Thus far, the salts of morphia (because they are used most) are associated with sodium chloride, or sodæ sulphas, and compressed into small solid tablets. The soda assists in bringing morphia into a state of fine subdivision, which allows it to be dissolved in water immediately. The manifest superiority of these tablets over solutions is their permanence, as they do not change, and are ready for use at any time. Each tablet contains a definite dose, and is therefore reliable, giving the physician positive knowledge of the quantity administered.

"To accomplish the solution of a tablet usually requires not more than thirty seconds, and may be brought about as follows: The syringe is charged with about twenty minims of water, which is poured into a teaspoon, or other convenient receptacle; the tablet, being dropped in, is crushed with the end of the syringe, to which the needle fits, and after all the lumps are broken, the solution is drawn up and forced out three or four times, when usually the whole mass will be entirely dissolved and ready for use."

I have now given a list of nearly all the remedies that have received special attention by trial and experiment during the past eighteen months. A few of them are valuable, and many of them are not, and never will be. The great probability is that not more than half a dozen of them will stand the test and become real helps in the treatment of disease.

A remarkable thing connected with the introduction of the remedies mentioned is, that the majority of them come from far off and but little known lands. As countries are opened to the world, it is but natural to expect that their products will be distributed; and that their flora possessing special properties will be presented to the physician, is also to be expected; but the fact that so many have been heralded to the profession for trial during the past few months, can only be explained by the supposition that the manufacturers of drugs and pharmaceutical chemists

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have been specially active. If there is anything in the world that will be grasped at by the public, it is a medicine whose virtues are sounded from "pole to pole," and this, regardless of its real worth; and I am afraid that there is a tendency among many physicians of unsettled views to grasp at every "new thing"—to be always ready to try it on a patient of theirs "that there won't anything touch,"—evidently too much zeal in searching for the "specific," and too little investigation into the causes of the affection which, when found, generally can be removed.

Pharmacy and chemistry, however, are doing much for physicians at the present time. They seek out new remedies and agents; they try to improve them in quality and purity; they present their active principles to the physician in pleasant and palatable forms, and then allow him the free choice of accepting or rejecting them as in his experience and judgment it seems best. How many old, nauseous remedies are now made pleasant, agreeable, and palatable; and these improvements, in the generality of cases, have come from the pharmaceutists, and not from the physician. Emulsions, elixirs, tasteless pills, capsules, wafers, and compressed tablets—all nice to take—now cover the nauseous taste and vile odors that helped to "kill or cure" thirty years ago. Then the odors of rhubarb and asafœtida were the doctor's passport, but now it is "Sugar and spice, and all things nice," under cover of the aromatics.

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ART. IX.—POISON OF DIPHTHERIA AND ERYSIPELAS IDENTICAL.

BY JOHN G. MEACHEM, M. D., RACINE.

During the last year, the whole Northwest has been visited, more or less severely, with diphtheria and erysipelas. Many localities in our own State have suffered in a most fearful manner. The brightest and the best of the little ones of almost innumerable households have been snatched away with a suddenness and a sadness that has terribly tested the faith of fond parents as to the justice of that Providence which has ordered their cup of affliction to be so full and bitter.

Our own city has experienced its full share, for within the space of five months, sixty children, between the ages of two and twelve years, have fallen victims to this deadly enemy to child-life. This is not as great a mortality as has occurred in some localities, but, truly, it is enough to terrify the strongest-hearted parent when he hears that the disease is in his midst.

During the past six months, with us, diphtheria and erysipelas have traveled along together in close companionship. In some families the former has made the first attack, while the latter, seeming not willing to be out done, has boldly entered and attacked the very same subjects, or those that had escaped the grasp of the former, and, *vice versa*, erysipelas has been the first to appear, and diphtheria afterwards.

A few very remarkable and interesting cases of this character have come under my observation, a few of which I will give; and I will remark, that nearly all of them have been severe and sudden in their attack, it making no difference which disease appeared first. Every one was ushered in with a decided chill, followed by high pyrexia, the temperature reaching 105°.

Early in November, a boy, fifteen years of age, got upon the platform of a railroad car to ride from one city depot to another, and by some accident fell off and partially under the car, so that the wheels of two cars passed over his left leg, crushing it in a most horrible manner, and compelling me to amputate above the knee. Every care was taken antiseptically, but on the fifth day erysipelas attacked the stump, and extensive sloughing ensued. In a few days a younger brother of the injured boy was taken with erysipelas of the head and face, of a very severe type, which lasted two weeks, and, as he began to recover, another brother and the mother had diphtheria, both of them being very sick. These were about the first of the class of cases that I am now considering, but after this they were quite numerous all over the city.

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Mr. M., aged fifty, a resident of Illinois, came to the city to visit a brother. Not many days after his arrival he was attacked with a sore throat, which was preceded by a chill; violent fever followed, and an extensive diphtheritic exudation at once occurred. On the fourth day of the disease, erysipelas made its appearance on the right cheek and nose, and very soon extended itself over the whole face, closing both eyes, and reaching over the whole hairy scalp. After ten days its force was expended, and he slowly convalesced. Before he had recovered, a niece, aged thirteen years, was taken with diphtheria, and then the brother whom he had come to visit was taken down with erysipelas, and passed through a precisely similar course, though for three days he was wildly delirious. The wife also had a slight attack of diphtheria. In this family there were three cases of diphtheria, two of erysipelas, and one subject had both.

Mrs. C., aged twenty-five, was near the terminal period of her gestation, when she was attacked with diphtheria. Her temperature reached 105°, and an exudation quite unusual in extent appeared. At the end of the third day, labor came on, which was rather severe and protracted, lasting about fifteen hours. She gave birth to a large, healthy, male child. On the second day after her delivery she was attacked with erysipelas, which invaded every part of the head and face, and extended to the neck and shoulders. On account of her puerperal condition, but little hope was entertained of her recovery, but she finally surmounted all her complications and recovered.

Mr. D., aged forty, had an attack of diphtheria, which was followed, in a few days, with erysipelas of the hand and arm, from which he suffered severely, and did not recover for many weeks. Four of his children were down with diphtheria when he was taken sick.

Rev. Mr. K., aged about forty-five, had erysipelas of the right hand, arm, and shoulder, accompanied with terrific constitutional symptoms. He had been very attentive to the family of the gentleman who taught his parish school, four of whose children had severe diphtheria.

Mr. B., a young man of twenty, had well marked diphtheria. On the third day of the disease, erysipelas of the head and face developed, which lasted eight days.

Mr. R., a man aged forty-three, had erysipelas of the head and face. Three of his children were having diphtheria at the time.

Mrs. H., aged twenty-seven, who was seven months pregnant, was attacked with diphtheria of the most severe form, with an extent and amount of exudation that I have never seen exceeded. Her temperature was 106° for the first thirty-six hours. On the fourth day, labor pains began to come on, and at the end of six hours she was delivered of a pair of twin boys, both alive. Four days after confinement, she was taken with erysipelas of the head and face, which lasted ten days. She was in a most critical condition all this time, with scarcely a shadow of hope for recovery. She finally recovered, but she still has paralysis of the

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palate, and nearly half of what she attempts to swallow is returned through the nasal orifices.

Several other cases of the same character could be mentioned, but these are sufficient to show that the poison which produced diphtheria and erysipelas here, during the past winter, was purely identical.

During nearly forty years of practice, I have never before seen this intermingling of the two diseases. I think but two cases of scarlet fever was reported as having occurred in the city during the time, and but two or three of measles.

My treatment consisted of stimulants, chlorate of potash, tincture of iron, quinine, with the careful use of anodynes, and the best support, which I firmly believe to be *the* treatment to ensure success, if any. Carbolic acid, chlorinated soda, and permanganate of potash, are very useful as correctives and aids to the more important means—stimulants and support. "Valentine's Beef Juice," I have found a most convenient and reliable nourishment, particularly for children, as it is palatable and very concentrated.

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Art. X.—OBITUARY OF MILES G. MYERS, M. D.

OF WAUTOMA, WIS.

By N. M. Dodson, M. D., of Berlin, Wis.

Dr. Miles G. Myers, a member of the Wisconsin State Medical Society since 1872, was born at Lakeville, Michigan, in 1831. His parents removed soon after to Ohio, and afterward to the state of New York. He attended school at Aurora, N. Y., and after a few terms of teaching, entered Baldwin College, at Berea, Ohio. His first course of medical lectures was attended at the Michigan University, but his second was at the Buffalo Medical College, where he graduated, in 1868. Commencing the practice of medicine, and remaining at Breeseville, N. Y., for two years, when his health utterly failed. Symptoms of pulmonary consumption appearing, he determined, with faint hope, to try a change of climate. Fortunately, his next location was upon the sandy and dry soil of Waushara county, he locating at Wautoma, 1870. The country is not very thickly settled; long rides kept him much in the open air, and he soon almost forgot his disease and enjoyed robust health until the commencement of his last and fatal illness, an obstruction of the bowels, probably from intussusception, suffering untold agony for five days, and dying on the eighteenth day of January, 1880.

Dr. Myers was a man of great industry and perseverance, entirely self-reliant, and much above the average of medical practitioners in preparation for his duties, whether medical or surgical; performing many important operations with ability and success. He was unassuming in manners, but devoted to his profession, keeping well up in its periodical literature and new works, and supplied with the latest instruments for explorations and operations. He was a very agreeable and useful neighbor; in consultations exhibiting keen research, a close discrimination, a well-stored memory of parallel or comparative cases. Without jealousy or envy he aimed only to do good to the sufferer. He was a consistent member of the Congregational Church, a faithful Mason and Good Templar, and lent a ready hand to every worthy cause. As a practitioner he was just to himself, his family, and his patients, in requiring that his reasonable fees should be paid in reasonable time; and so, in an unpromising location, where others had failed, he amassed and left a competence for the support of a devoted wife and two children, who are left to mourn his loss. He leaves a vacancy in his professional ranks, in his society associations, and in his relations as a neighbor and citizen, that will not soon be filled.

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ART. XI.—OBITUARY OF WILLIAM McCALL, M. D.

OF OMRO, WINNEBAGO CO., WIS.

BY R. L. COOK, M. D., OF OMRO, WIS.

William McCall, M. D., was born at Franklin, Delaware Co., N. Y., June 13, 1810, and graduated at Fairfield Medical College, Fairfield, Herkimer Co., N. Y., January 31, 1832. In April of the same year he went to Jersey Shore, Pa., and commenced practice, where he remained till 1836, when he settled at Rushford, N. Y. He was first married February 3, 1833, and his wife lived till 1848, when she died in January of that year, leaving him three children. In the winter of 1848-9, he attended a course of medical lectures at Buffalo, N. Y. He married again, but his wife lived only three years afterwards, dying of pulmonary consumption, and leaving a little son but a few months old. He has buried three wives and two children; and a wife, son, and daughter still survive him. The two last named are children of his first wife. The son resides in Lincoln, Neb., and the daughter, Mrs. C. M. Evans, in Boston, Mass. He remained in Rushford until October, 1856, when he started for the Western country by the overland route, with his family and team. The principal reason of his making this journey was the failing health of his wife. He reached Weyauwega in January, 1857, and came to Omro, Dec. 25, same year. In 1863, he went to Copper Harbor, Lake Superior, Mich., his wife dying soon after his arrival. In 1865, he settled at Hancock, Houghton Co., Mich., and returned to Omro and commenced practice in the year 1867, where he remained until his death, which occurred Aug. 25, 1879. During his last illness his wife, son, and daughter were with him and saw him laid in his last resting place. The primary cause of his death was enlargement and inflammation of the prostate gland. He became a member of the Presbyterian Church May 1, 1858, and of the State Medical Society in 1870, and of the Masonic fraternity in 1867. In each of these he was an active, zealous, and worthy member till death. He was buried with Masonic honors by Omro Lodge, of which he was a member, held in high esteem by his brethren, and was followed to his grave by a large concourse of friends and neighbors.

The Rev. H. L. Brown, of Reedsburg, Wis., formerly pastor of the Presbyterian Church of this place, writes, under date of Sept. 2, 1879, a part of which is as follows:

"For the man, as I have known him in his old age, I have a profound admiration. He was not perfect, but there were so many

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virtues and excellencies in his character, that to know him thoroughly was to love him. In the relation of husband, father, and physician, he stood far above the average."

"His daily life was singularly pure, sincere, and honest."

"There are not many men so free from impurity and grossness in word and action, so modest in self-assertion, so tender and womanly in their feelings, so faithful in trying to walk uprightly in all their ways."

"As a physician, Dr. McCall was utterly free from quackery, and thoroughly honest in his dealings with his patients. By careful study he kept pace with the improvements and discoveries of the age. He had as little jealousy towards his medical brethren as any physician I ever knew. His aim was to live faithfully up to the ethics of his noble profession."

"Nearest to my ideal of what a physician ought to be."

"A sincere Christian, striving daily in all humility to walk in the footsteps of his Divine Master. Faith in Jesus Christ gave symmetry and completeness to his character."

The writer of this article was familiarly acquainted with Dr, McCall since 1868, and frequently met him in counsel at the bed-side of patients, who were under treatment by one or the other of them, besides often meeting him in the relation of friend, neighbor, or Masonic brother; and for that reason is able to fully endorse the words of Rev. Mr. Brown. In the death of Dr. McCall, the loss to the medical profession, to the church, and to the community, is indeed great.

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ART. XII.— OBITUARY OF DARWIN DUBOIS, M. D.

OF LAKE MILLS, WIS.

BY H. B. WILLARD, M. D., OF FORT ATKINSON, WIS.

Dr. Darwin Dubois was born in Hastings, Oswego Co., N. Y., on the fifth day of April, 1821. At the age of twenty-eight he migrated to Rockford, Ill., and in 1852 commenced reading medicine, under the late Dr. C. N. Andrews, of that city. In 1855 he took his degree from the Rush Medical College, and the same year located in Aztalan, this state, for the practice of his profession. Three years later, he moved to Lake Mills, where he resided until his death, which occured June 29, 1879. He became a member of the State Medical Society during the first year of his practice, and rejoined in 1876, after its re-organization. In the late war he went out as assistant surgeon, but was soon promoted to first surgeon of the twenty-ninth regiment Wisconsin volunteers, and served two years and eight months. For several years prior to his death, he suffered from disease of the heart, which ultimately produced embolism, and consequently gangrene and death.

This is the merest outline of his active life. He was not born in wealth. Industrious hands and a brave and resolute heart, gave him his profession; his profession faithfully followed, gave him and his family a competency.

Before entering upon the practice of his profession, he was married to Miss Harriet A. Leonard, a graduate from Rockford Seminary; an estimable lady, not inferior to himself in mental capacity and culture, with whom it was impossible for him to rust or retrograde. A son and a daughter were the fruit of this union, and the vacancy in the medical profession, occasioned by the death of the father, is being creditably filled by the son.

Dr. DuBois was devotedly attached to his profession, which he honored by bringing into it moral worth, industrious habits, a Christian's faith, and a fair amount of medical knowledge. There was no bigotry in his composition; and yet, he had no sympathy or patience with anything that savored of empiricism, and many a charlatan has cause to remember his biting sarcasm, burning ridicule, and silent contempt. There was just enough egotism in his nature to dignify his manhood, by giving him a decent respect for his own opinions, and confidence in his own judgment; gracefully yielding when, and only when, he was fairly convinced they were in error. He possessed a well-balanced mind, quick perception, and sound judgment, and hence his success in practice. He was not a great

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man, nor deeply scientific, but he was a *good* man and carried God's sunshine with him wheresoever he went, freely imparting it to all with whom he came in contact; and this was another important secret of his success. He seemed to recognize the potency of a cheerful presence, in energizing *vis medicatrix naturæ;* and I have often thought that his hopeful, genial nature was not secondary to his medicines in healing the sick.

For many years my associations with him were such that I came to know his inner life—the motive power, the impelling force of all his actions—better, perhaps, than anyone else outside his family. He was honest, and he was radical in his honesty; he was impulsive, but his impulses were always good, and with him they were convictions. It was not necessary for him to sit down, and institute a process of reasoning, to prove a right; he grasped it instinctively, and clung to it tenaciously; it immediately became a fixture—an absolute rule, governing all his movements. With him right only was policy, and hence he could never have made a successful politician. As a religionist, he was liberal and tolerant. Though a member of the Methodist Church, he cared very little about theology, but much about Christianity, and was a consistent and exemplary follower of the Savior. As a friend he was genial, forbearing, faithful, and true; as a father, indulgent and justly proud; as a husband, alas, only one heart can know the vigor it received from his manly nature; only one heart know the assurance and safety it felt while resting in his strong protective arms; only one heart know the bankruptcy following his departure.

It requires years for a community to measure its loss in the death of such a man. There is a general feeling that a friend is gone—a vague, sad sense of bereavement in the public heart—but individual appreciation of the extent of that loss will only come as the years bring sickness to loved ones, and a friend and counselor is needed, and the services of a faithful, conscientious physician required.

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ART. XIII.—OBITUARY OF E. B. WOLCOTT, M. D.

OF MILWAUKEE.

BY J. K. BARTLETT, M. D., OF MILWAUKEE, WIS.

Dr. Erastus B. Wolcott, the subject of this brief obituary sketch, was born October 18th, 1804, in Benton, Yates county, New York. His parents were from Litchfield, Conn. He was a lineal descendant of Gov. Oliver Wolcott, one of the signers of the Declaration of Independence. He commenced the study of medicine when about eighteen years of age, under the direction of Dr. Joshua Lee, of New York, and received his degree of M. D. from the Medical College of Western New York, in 1829. In 1835 he was appointed assistant surgeon in the army, and not long after was stationed at Mackinaw. There he married a daughter of Mr. Michael Dousman, and in 1838 resigned his commission and settled in Milwaukee, where he practiced his profession until the time of his death, January, 1880.

The Doctor was a prominent member of the early Territorial and State Societies, and a punctual attendant in days when sessions were held in the winter, at Madison, and the state of the roads and public conveyances rendered attendance no small task. He was also one of the members of the Milwaukee County Medical Society, at the time of its organization, in 1846, and was present when it re-assembled, in 1879, after a long interval of inaction. He was among the originators of the first local society, the Milwaukee City Medical Association, in 1845, and took an active interest in its sessions, as well as those of some subsequent organizations, for many years.

Dr. Wolcott, at the time he came to Milwaukee, bore a good reputation as a surgeon, which deservedly increased, and became more widely spread as the years passed away. He was gifted with great natural qualifications for his profession. He possessed keenness and quickness of perception; was a neat and dexterous operator; prompt in action; fertile in expedient; untiring in care and attention; and always manifested that gentle tenderness to the patient, which is, or should be, a prominent attribute of the successful surgeon. Up to the time of his last illness, he was ever ready to respond to any call, from the poor as readily as from the rich, and by night as cheerfully as by day. There are thousands yet living in our state, in whose hearts the mention of his name will always call up deep feelings of gratitude and affection. During his life, Dr. Wolcott was not only actively engaged in his profession, but he held many offices of trust and honor in the city and state.

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He was made Surgeon General of the State Militia, in 1842, and Major General of the first division of Wisconsin Militia, in 1846; one of the Board of Regents of the State University, in 1850; was elected a member of the Board of Trustees of the Northwestern Mutual Life Insurance Co., in 1858, and soon after its consulting Medical Director. He was appointed one of the Trustees of the State Insane Hospital, in 1860, and one of the first Board of Managers of the National Homes for Disabled Soldiers, in 1866, which position he retained until his death. He was appointed one of the Representatives of the State, at the International Exposition in Paris, 1867, and a short time before his death, was elected first Vice-President of the Humane Society of this city, in the object and work of which he was much interested.

His war record I have not space to dwell upon. He was appointed Surgeon General of the state, in place of the former incumbent, immediately after the attack upon Fort Sumter. He traveled much to further the interest of the troops raised, visited them upon various battle fields; among others, went with Governor Harvey and a staff of surgeons to Shiloh, immediately after the tidings came that our regiments had suffered severely in that action. After about two weeks of hospital service there, he, with the Governor, procured, by persistent effort, from General Halleck, then in command, a steamer for transporting home our sick and wounded Wisconsin soldiers, who could bear removal.

Of Dr. Wolcott as a man, a few closing words. The writer made his acquaintance in 1841, and well remembers, as do most of us in later years, the fine personal appearance and attractive manner which characterized him, but, more especially, he personally recalls the kind hearted words of encouragement with which the Doctor cheered the young man just commencing professional life. The friendship then commenced continued unbroken to the end. Dr. Wolcott was a man of noble nature, unselfish, honest, courteous, entirely above all petty suspicions or artifices; wide in his views, and full of generous and kindly feelings. Even his faults were attributable to the ever present desire to oblige or assist any one who asked his aid. This trait led, at times, to acts which involved obligations for others, and subsequent pecuniary loss, and to it alone may be truthfully ascribed those violations of professional usage, which sometimes annoyed and grieved his medical friends. His busy, active life for others, has ended. His erect, graceful figure, which has been seen daily, walking or riding through our streets for more than forty years, will greet our eyes no more. His memory will live in the hearts of thousands, to whom he has been an "Angel of good" in the hours of pain and suffering, and those who knew him most intimately will ever feel that they have lost a true and tried friend, whose place can never be filled.

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ART. XIV.—OBITUARY OF FRED. H. LINDE, M. D.

OF OSHKOSH, WIS.

BY J. R. BARNETT, M. D., OF NEENAH, WIS.

Dr. F. H. Linde was born in Green Bay, Wis., March 29, 1847; he died at his home, in Oshkosh, of tubercular pharyngitis, April 14, 1881. So ended, in its spring-time, a career promising and brilliant beyond that usually opening up to the young professional man,—brilliant in its short record of actual achievement, and full of promise of greater labors and higher honors in years to come. Of him it can be said with peculiar appropriateness, that he was "the architect of his own fortune." Beginning his professional studies with limited means, and without the advantages of previous academical training, by patient, pains-taking labor, in season and out of season, he rounded out the symmetrical structure of a good English and medical education, graduating at Rush Medical College with the class of 1867-8. Shortly afterwards he married Miss Adelaide Gudden, of Oshkosh, and settled in that city for the practice of his chosen profession. During the years that followed it was the good fortune of the writer to enjoy an intimate personal acquaintance with Dr. Linde, and he owes many an inspiration to the unwearied industry, the tireless zeal with which the young doctor set about laying the foundations of future success in business, and of high attainment in his chosen art. In such a spirit, and with such labor, he conquered success. Rising rapidly in his profession, it took but a few years to place him in the front rank,—a position he sustained more by the practical test of success at the bedside than otherwise, although his contributions to the transactions of the medical societies of which he was a member were numerous and valuable. An influential, public-spirited citizen; an honest man; a true gentleman; a faithful friend; a devoted son, husband, and father. He lived universally respected and beloved, and died universally lamented.

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ART. XV.—CONSTITUTION AND BY-LAWS OF THE STATE MEDICAL SOCIETY OF WISCONSIN.

PREAMBLE.

We, the undersigned, physicians and surgeons of the State of Wisconsin, in order to cultivate harmony and kind feeling among the members of the medical profession, to promote the advancement of the medical and collateral sciences, and to assist us in acquiring a knowledge of the same, and in keeping pace with the progress of medical science; to help us appreciate the magnitude and nature of the mutual duties and responsibilities existing between the medical profession and the community, and to protect ourselves and society against the impositions of medical pretenders, do hereby agree to associate ourselves together, and be governed by the following

CONSTITUTION.

ARTICLE I.—This organization shall be known by the name of the State Medical Society of Wisconsin.

ART. II.—The Society shall meet annually, on the first Tuesday of May or June, as may be directed by the Secretary, at 8.00 o'clock, P. M., in the place designated by the Society at its previous meeting.

ART. III.—Seven members of this Society shall constitute a quorum for the transaction of business, but any number may adjourn from time to time.

ART. IV.—The officers of this Society shall be a President, a First and Second Vice-President, a Secretary, a Treasurer, and three Censors, who shall be elected at the annual meeting, and hold their offices respectively for the term of one year (except the Censors), and until their successors in office are duly elected and qualified. The Censors shall be elected for three years, one to be elected annually, and at the first election following the adoption of this amendment, one shall be elected for the term of one year, one for two years, and one for three years.

ART. V.—The President shall preside at the meetings, preserve order and decorum in debate, give a casting vote when necessary, and perform all the other duties that custom and parliamentary usage may require, and deliver an address at the close of his term of office. He may call *special meetings* at any time, if he deem it necessary; and it shall be his

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duty to call such meetings whenever requested, in writing, to do so by five members of this Society.

ART. VI.—In case of the absence or inability of the President to discharge his duties, the latter shall devolve upon the Vice-Presidents, and in order of their election.

ART. VII.—The Secretary shall record the minutes and authenticate the proceedings, give due notice of all meetings, conduct the correspondence of the Society, preserve all records and papers belonging to the Society, and at the close of his term of office shall lay before the Society a full report of his official correspondence and doings.

ART. VIII.—The Treasurer shall collect and receive all moneys due or presented to the Society, and shall disburse the same under its direction. He shall keep a book in which he shall enter the debits and credits of every member, the amounts received and distributed by him as Treasurer, and shall, at the expiration of his term of office, and at any other time, when requested to do so by the Society, report the condition of the Treasury. He shall also give good and sufficient bond to the Secretary, in behalf of the Society, for the faithful discharge of his trust.

ART. IX.—The Censors shall constitute a committee for the examination of applicants for membership, but shall entertain no petition for membership unless the applicant shall appear in person and present the certificate of two respectable physicians, living in the immediate vicinity of said applicant, as to moral and professional character. They shall also examine candidates for the study of medicine, as to their educational qualifications; these qualifications to be at least a good knowledge of English and of mathematics; and no member of this Society shall receive a student into his office until such student shall present a certificate from the Board, stating that he has the necessary preliminary education.

ART. X.—Any regular physician making application for membership in accordance with the provisions of Art. IX, and who shall present a diploma from a regularly organized school of medicine of good repute, or a certificate or diploma of membership in a county or district medical society, accompanied by a certificate of six years' practice, or who shall submit to such an examination as the Censors may impose, shall, on their recommendation, and on receiving a vote of two-thirds of the members present at any annual meeting, be entitled to membership by signing the Constitution and paying five ($5) dollars to the Treasurer of the Society.

ART. XI.—This Society may elect honorary members at any annual meeting, by a vote of three-fourths of the members present.

ART. XII.—All regularly organized County Medical Societies in this State may elect delegates to this Society in the ratio of one for every five of its members, and such delegates shall, on payment of the annual dues, be entitled to all the privileges of membership in this Society during the time for which they are elected.

ART. XIII.—This Society shall have power to obtain funds by an equal assessment of its members, by voluntary contributions, and by the

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sale and disposal of publications and of works for publication; but no assessment shall be made for more than three dollars upon each member in any one year, nor except at annual meetings, or at meetings called for that express purpose; in the latter case the object of the meeting shall be set forth and published in the call.

ART. XIV.—This Society may censure, reprimand, or expel any member for improper conduct, as may be prescribed by the By-Laws.

ART XV.—No amendment shall be made to this Constitution, unless the proposed amendment shall have been submitted in writing at some previous regular meeting of the Society, and for such action eight members shall be necessary for a quorum, and two-thirds of the members present must vote for the amendment. *Provided*, however, that by a unanimous vote of ten or more members present at any annual meeting, any article of this Constitution may be amended or repealed, and articles added thereto without such previous notice.

BY-LAWS.

RULES OF ORDER.

ARTICLE I.—In the discussion and disposition of all business coming before the State Medical Society of Wisconsin, parliamentary rules of debate shall be observed, and Jefferson's Manual shall be the guide.

ORDER OF BUSINESS.

ART. II.—The order of business at the annual meetings of the Society shall be as follows:

1. The calling of the roll.
2. The reading of the minutes.
3. The admission of members.
4. The Secretary's and Treasurer's reports.
5. The reading of essays and reports from all Standing Committees.
6. The reading of essays and reports of cases.
7. Miscellaneous business.
8. Unfinished business.
9. The election of officers.
10. The appointing of Standing Committees.
11. The President's Address.
12. Adjournment.

FORCE OF THE CODE OF ETHICS.

ART. III.—The Code of Ethics heretofore adopted by this Society from the American Medical Association shall have the full force of any article of either the Constitution or the By-Laws.

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DISCIPLINE OF MEMBERS.

ART. IV.—SEC. 1.—Any member shall be liable to censure, suspension, or expulsion, for willful neglect of the rules and regulations of this Society, for any flagrant violation of our code of ethics, or for any gross or immoral conduct. A vote of two-thirds of the members present shall be requisite to censure, to suspend, or to expel.

SEC. 2.—Should any charges be preferred against any member which might lead to his censure, suspension, or expulsion, such charges shall be preferred while the Society is in special executive session, and the Secretary shall immediately give the accused a written copy of the said charges, and state by whom preferred. The matter shall then lie over until the next annual meeting, when due action shall be taken thereon.

SEC. 3.—Any member of this Society, who, from professional incompetency, or from any other sufficient reason not already mentioned, shall be deemed unworthy of the fellowship of this Society, may be deprived of his membership as provided in sections one (1) and two (2) of this article.

SEC. 4.—Any member of this Society who shall absent himself from the meetings of the same for three successive years, without rendering to the Society a satisfactory excuse, shall lose membership in the same, but may renew his standing by repayment of the admission fee.

SEC. 5.—Any member failing for a period of three years to pay to the Society the sum of three ($3) dollars annual dues, shall also lose membership in the Society, unless such member shall have removed from the State, in which case he may remain an honorary member thereof during such absence. The annual dues of the Secretary are remitted.

SEC. 6.—If any member of this Society, to whom has been assigned any duty, such as the preparation of a report, or the reading of an essay, or like service, shall fail to perform such duty at the time assigned, he shall be relieved therefrom, but the duty assigned shall be due from him at the next meeting of the Society thereafter, and if he then fail to perform the service required of him, without rendering a satisfactory excuse for such neglect, he shall lose his standing as a member of this Society.

STANDING COMMITTEES.

ART. V.—The following named Standing Committees, each to be composed of three members, to be appointed by the President—except the Committee on Ethics and Publication, otherwise provided for—shall be organized at every annual meeting, for preparing, arranging, and expediting business for each next ensuing year, and for carrying out the objects of the Society not otherwise provided for, namely, a Committee on Ethics, a Committee on Arrangements, a Committee on Practical Medicine, a Committee on Surgery, a Committee on Obstetrics, a Committee on Finance, and a Committee on Publication.

The Committee on Ethics shall be composed of nine members, who shall be nominated by the President, and elected by the Society. Three

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of the number shall serve for a term of three years, three for two years, and three for one year after the first election; thereafter three shall be elected annually for a term of three years. They shall consider all cases for disipline of members. All charges made shall be referred to them without discussion; all evidence shall be presented to them, and they shall report their conclusions to the Society.

The Committee on Arrangements shall provide suitable accommodations for the meetings, and for the members from abroad, and, in general, attend to the wants of the Profession while attending the meetings of the Society.

The Committee on Practical Medicine shall make an annual report, embodying the recent and most practical improvements, discoveries, and advancements in the practice of medicine.

The Committee on Surgery shall make an annual report on the subject of surgery, and give a summary of the recent improvements, discoveries, and progress in this department of medicine.

The Committee on Obstetrics shall make an annual report on the subject of obstetrics and the diseases of women and children, giving a summary of the recent discoveries and improvements in this branch of medicine.

The Committee on Finance shall be the Executive Committee of this Society, to whom all accounts must be referred, and who shall make an annual report on the financial condition of the Society, and on all matters usually falling to the consideration of executive committees.

The Committee on Publication shall be composed of the Secretary, Treasurer, and President, who shall have charge of all matters intended for the press, and superintend their publication.

The reports of all standing committees shall, on their reference to the Publication Committee, be published in the Transactions of the Society. All other, or voluntary reports or papers, shall be referred to the committee under which the report or paper would properly fall, and such committee shall decide upon the publication of papers so referred. The publication of any paper is not to be understood as necessarily an endorsement by the Society of the views contained therein.

MEMBERS TO REPORT CASES.

ART. VI.—Every member of this Society who is neither appointed to read an essay, or to the chairmanship of a committee, shall give a complete detailed written history of one case of disease occurring under his own observation, comprising everything touching its etiology, pathology, symptomatology, nosology diagnosis, prognosis, therapeutics, and hygienics.

AMENDMENTS.

ART. VII.—These By-Laws may be altered, added to, or repealed by a three-fourths vote at any annual meeting.

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ART. XVI.—MEMBERSHIP OF THE STATE MEDICAL SOCIETY OF WISCONSIN.

Allen, Hamilton .....Oconto
Anderson, W. A.....La Crosse
Armstrong, L. G. .....Boscobel
Bading, John P.....Milwaukee
Ballard, J. A.....La Crosse
Barling, Thomas .....Mindoro
Barnes, H. L.....Ripon
Barnett, J. R.....Neenah
Barrows, L. J..... ....Janesville
Barry John S....Prairie du Chien
Bartlett, E. W.....Milwaukee
Bartlett, J. K.....Milwaukee
Bell, Samuel .....Beloit
Bennett, D. O.....Waterloo
Bicknell, L. C.....Fort Atkinson
Binnie, John..... ....Poynette
Bird, H. R.....Mifflin
Bishop, S. S.‡.....Fond du Lac
Blair, W. M.....Darlington
Bliss, J. C..... .....Marshall
Bond, D. M....Johnstown Centre
Booth, Charles E.....Elroy
Bordon, W. H.....Milton
Boughton, D. F.....Mendota
Bradshaw, H. N.‡.....Monroe
Brett, Ben C.....Green Bay
Bristol, E. L. M.....Milwaukee
Broughton, R.....Brodhead
Buchan, A. L.....Union Grove
Burrall, George W.....Dodgeville
Burrington, S. O.....Columbus
Burroughs, F. V.*.....Mauston
Butler, Wm. C.. .....Janesville
Butterfield, H. L.....Waupun
Catlin, Geo. E.....Geneva
Chase, H. A.....Viroqua
Clark, Almon.....Sheboygan
Clark, S. S.*.... Menomonee Falls
Coakley, J. E.....Milton Junction
Coates, John T.....Excelsior
Cody, James.... ....Watertown
Cowles, L. C.‡.....Baraboo
Curtis, J. Wilber...Decorah, Iowa
David, Joseph W.‡.....Highland
Davies, D. C..... ....Columbus
Davies, John E.† .....Madison
Davis, J. C.*.....Fort Atkinson
Davis, M. M.....Baraboo
Day, F. H.....Wauwatosa
Decker, D. H. .....Menomonie
De Hart, I. N.‡.....Mendota
De Voe, I. W.....Wausau
Dodge, E. F.....Fond du Lac
Dodson, N. M.....Berlin
Dodson, B. F... .....Berlin
Dorland, James.....Milwaukee
Dubois, Darwin*.....Lake Mills
Earll, R. W.....Columbus
Eastman, Wm.....Mineral Point
Egan, Charles..... .. Highland
Ellis, Edwin..... ...Ashland
Evans, T. W..... .....Stoughton
Favill, John.....Madison
Fischer, Francis*.....Madison
Fisk, M. H.....Depere
Fox, G. H.....Oregon
Fox, Phillip.....Madison
Fox, William.....Milwaukee
Frank, Louis F.....Milwaukee
Freeman, A. R.....New London
Fuller, S. L.‡.....Milwaukee
Gage, M. R.....Sparta
Galentine, Samuel.....Neenah
Gapen, Clark.....Mendota

* Deceased. † Honorary Member. ‡ Removed from State.

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Garry, John E.....Stockbridge
Gee, J. E.....Brandon
Geyer, John.....Muscoda
Gleason, W. H.....Mazomanie
Goe, J. W.‡.....Oshkosh
Godfrey, H. T.‡.....Benton
Gorham, W. M.†.....Milwaukee
Grættinger, Alois.....Milwaukee
Griffin, E. L.....Fond du Lac
Guernsey, A. H.....Amherst
Hall, Samuel.....Reedsburg
Hall, Storrs.....Rosendale
Hall, J. C.....Monroe
Hamilton, I. P.....Darlington
Hasse, Herman E.....Milwaukee
Hausman, William.....Ashford
Hawley, R. W.....Milwaukee
Hewitt, M. R.....Pewaukee
Hobbins, Joseph.....Madison
Hobbins, William.....Madison
Hoegh, Knut.....La Crosse
Hopkins, J. F.....Oconomowoc
Horton, E. G.....Whitewater
Hunt, Geo. F.....West Bend
Irwin, E. H.....Lodi
Jenkins, G. W.....Kilbourn City
Johnson, A. W.....Chippewa Falls
Johnson, S. C.....Hudson
Johnstone, John.....Neosho
Kendall, A. O.‡.....Middleton
Kempster, Walter,.....Winnebago
Ladd, G. D.....Milwaukee
Lawrence, Amos*.....Oshkosh
LaCount, D.....Chilton
Leavitt Justin J.....West Salem
Leonard, Wm. T.‡.....Wonewoc
Lewis, Frank L.....Arcadia
Linde, Christian.....Oshkosh
Linde, F. H.*.....Oshkosh
Lindsay, H. E.....Whitewater
Loomis, E. E.....Janesville
Loomis, G. T.....Cascade
Lueck, A. W.*.....Mayville
Luehmann, F. S.....Two Rivers
Lynch, Daniel W.....West Bend
Mack, J. A.....Madison
MacNeill, J. E.‡.....Mauston
Mann, H. E.....Marinette
Manley, Ira, Jr.....Markesan
Marden, F. A.....Milwaukee
Marks, Solon.....Milwaukee
Marston, S. L.....Campbellsport
Mason, Darius.....Milwaukee
Masterson, J. A.....Waterloo
McBride, J. H.....Wauwatosa
McCall, William*.....Omro
McComb, Isaac.....Brillion
Meachem, E. H. G.....Milwaukee
Meachem, J. G.....Racine
Meachem, J. G., Jr.....Racine
Meacher, Wm.....Portage
Miller, D. McL.....Oconomowoc
Miller, Clark I.....Whitewater
Mitchell, John†.....Janesville
Monroe, Wm.....Monroe
Moore, D. W.....Waupun
Moore, J. R.....New London
Moorehouse, W. D.....Plymouth
Myers, Miles G.*.....Wautoma
Newel, G. E.....Waterford
Nichols, Theron‡.....Milwaukee
O'Brien, J. N.....Waupun
O'Connell, R. S.....Cato
Orrick, J. H.*.....Stevens Point
Ottilie, Chas.....La Crosse
Page, J. L.....Racine
Palmer, Henry.....Janesville
Pelton, L. H.....Waldo
Phillips, B. T.....Menomonee, Mich
Plagemann, Henry.....Woodland
Pritchard, J. F.....Manitowoc
Raymond, D. A.†.....Fond du Lac
Reeve, J. T.....Appleton
Regan, J. N.....Oconomowoc
Reynolds, B. O.....Geneva
Reynolds, F. L.....Neosho
Reynolds, J. C.....Geneva
Rice, John A.....Merton
Richards, J. B.....Viroqua
Riddell, S. S.....Chippewa Falls

* Deceased. † Honorary Member. ‡ Removed from State.

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Robbins, C. W.....Milwaukee
Rockwell, W. M.....Johnstown
Rogers, C. E.....La Crosse
Rogers, E. M.....Hartford
Rogers, Jirah.....Ripon
Rowley, A. A.....Middleton
Rundlett, J. R.....Postville
Russell, J. A.....Cedarburg
Russell, T. P..... Oshkosh
Sanborn, Jeremiah.....Bay View
Schorse, William.....Milwaukee
Searles, W. H.....Wausau
Seiler, George.....Fountain City
Selden, O. G.‡.....Reedsburg
Senn, Nicholas.....Milwaukee
Shepard, J. L....Sheboygan Falls
Smith, C. M.....Evansville
Spalding, W. C.....Watertown
Sperry, Johnson*.....Delafield
Stadler, Chas. L.....Milwaukee
Stair, T. F.....Mazomanie
Stair, U. P.....Black Earth
Stanard, F. D.....Martinville
Stansbury, Emory.....Appleton
Stark, Geo. A.....Milwaukee
Stark, Theodore F.‡....Milwaukee
Steele, Geo. M.....Oshkosh
St. John, J. W.....Janesville
Stockman, Geo. C..Fort Atkinson
Strong, H. P..... .....Beloit
Terhorst, H.....Richfield
Thomas, W. M.*.....Darlington
Thompson, J. H.....Milwaukee
Thorndike, Wm.....Milwaukee
Van Buskirk, Joseph‡.....Elroy
Van Dusen, Harmon..Mineral Pt.
Van Dusen, W. H.....Montford
Vittum, W. H.....Baraboo
Vivian, J. H.....Mineral Point
Walbridge, J. S.....Weyauwega
Ward, A. J.....Madison
Waterhouse, M.*.....Portage City
Wenzel, H. P ..... Milwaukee
Wheeler, A. L.....Spring Green
Whiting, J. B.....Janesville
Whyte, W. F.....Watertown
Wigginton, R. M .....Watertown
Wight, O. W.....Milwaukee
Wilber, Geo. D.†....Mineral Point
Williams, J. Ll.....Cambria
Williamson, R. H.. ...Milwaukee
Wing, Charles E..... ...Hartford
Witter, G. F.....Grand Rapids
Wolcott, E. B.*.....Milwaukee
Woodworth, L. P.‡.....Necedah
Woodworth, T. F.‡.....Janesville
Wright, A. B.....Oshkosh
Youmans, H. A .. ..Mukwonago
Zielly, H. E.....Chilton
Zinns, A. J..... ...Milwaukee

* Deceased. † Honorary Member. ‡ Removed from State.

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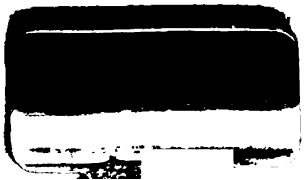

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